

DRAFT

POTOMAC-GARRETT STATE FOREST ANNUAL WORK PLAN

FISCAL YEAR 2020



The mark of
responsible forestry



Good for you. Good for our forests.®

SFI-00050

| | | |
|-----------|-------------------------------|-------|
| Prepared: | _____ | _____ |
| | (Forest Manager) | Date |
| Reviewed: | _____ | _____ |
| | (Regional Forester) | Date |
| Reviewed: | _____ | _____ |
| | (Land Acquisition & Planning) | Date |
| Approved: | _____ | _____ |
| | (Environmental Specialist) | Date |

Potomac-Garrett State Forest
FY- 20
Annual Work Plan



**Potomac-Garrett State Forest
FY-20 Annual Work Plan**

Contents

| | |
|-----------|--|
| 5 | I. State Forest Overview |
| 5 | II. AWP Summary |
| | III. General Location Maps |
| 7 | – Map Key |
| 9 | – Potomac State Forest |
| 10 | – Garrett State Forest |
| | IV. Special Projects – Forest Resource Management and Planning |
| 11 | A. Continued Development of Sustainable Forest Management Plan |
| 12 | B. ESA Management Plan Development |
| 12 | C. Forest Stand Delineation, Inventory and Monitoring |
| | V. Maintenance and Operations |
| 13 | A. Maintenance & Management of Roads and Trails |
| 15 | B. Boundary Line Maintenance |
| 16 | C. Campground Operation and Maintenance |
| 16 | D. 3-D Archery Range Maintenance and Management |
| 16 | E. Interpretation and Education |
| | VI. Recreation Proposals |
| 17 | A. National Recreational Trail Grant Requests: Snaggy Mountain ORV Trail Rehabilitation |
| | VII. Ecosystem Restoration / Protection Projects |
| 19 | Non-Native Species Control |
| | VIII. Wildlife Management Proposals |
| 24 | PG-2020-W-03 Comp. 12 Stand 4 (Regeneration via patch clearcuts with wetland management to promote shrub expansion) |

IX. Silvicultural Proposals

- 29** Backbone Mountain Complex –
Stand Rehabilitation and restoration: Compartments 6,11 &12
- 31** **PG-2020-S-01** Comp. 6 Stand 8
(Non-commercial TSI and patch cuts)
- 36** **PG-2020-S-02** Comp. 11 Stand 16
(Regeneration via patch clearcuts)
- 40** **PG-2020-S-03** Comp. 12 Stand 4
(Regeneration via patch clearcuts)
- 45** **PG-2020-S-04** Comp. 12 Stand 7
(Regeneration via patch clearcuts)
- 49** **PG-2020-S-05** Comp. 12 Stand 8
(Regeneration via patch clearcuts)
- 53** **PG-2020-S-06** Comp. 31 Stand 5
(Weeding / treatment of interfering vegetation)
- 57** **PG-2020-S-07** Comp. 31 Stand 6
(Weeding / treatment of interfering vegetation)
- 61** **PG-2020-S-08** Comp. 34 Stand 9
(Begin regeneration via shelterwood thinning)
- 66** **PG-2020-S-09** Comp 41 Stands 5&7
(Regenerate via overstory removal)
- 70** **PG-2020-S-09** Comp 42 Stands 12&13
(Regenerate via overstory removal)

X. Operational Management and Budget Summary

- 74** A. Introduction
- 74** B. Funding Sources
- 75** C. Budget Distribution - Operational Budget
- 77** D. Summary

XI. Appendices

- 78** Appendix 1 - 10-Year Budget Summary
- 79** Appendix 2 - 10-Year Timber Harvest Summary Table
- 80** Appendix 3 - Glossary

I. State Forest Overview

The Potomac-Garrett State Forests situated in southwestern Garrett County in Western Maryland have the distinction of being the birthplace of forestry conservation in Maryland. The generous donation of 1,917 acres by the Garrett Brothers in 1906 not only serves as the foundation of the Garrett State Forest, but is the root of both Maryland's present Public Lands system and Forest Service. Mountain forests, streams and valleys make up the nearly 19,000 acres of this State Forest. The forest cover is predominantly a second growth mixed hardwood forest dominated by mixed oaks, sugar and red maples, black cherry, basswood, ash and birch. The geography of this area provides for a wide range of growing conditions from the harsh, wind and ice swept ridge tops of Backbone Mountain to the deep rich slopes above the North Branch of the Potomac River. Much of the State Forest lands contain excellent quality hardwoods.

II. Annual Work Plan Summary

In addition to the routine operations and management of the State Forest, the FY-20 Annual Work Plan for Potomac-Garrett State Forest details three Special Management Projects and 11 Land Management Projects that will be the focus of the State Forest management staff for FY-20. All projects and proposals within this Plan have been developed to meet one or more of the Land Management Guidelines and Objectives as seen in the Potomac-Garrett State Forest Sustainable Forest Management Plan including:

Forest Economy: management activities with a purpose to maintain an economically sustainable forest and contribute to the local economy through providing forest-related employment and products.

Forest Conservation: management activities with a purpose to protect significant or unique natural communities and elements of biological diversity, including Ecologically Significant Areas, High Conservation Value Forests and Old Growth Forests. Old Growth forest management serves to restore and/or enhance old growth forest structure and function.

Water Quality: management activities designed to protect or improve ecological functions in protecting or enhancing water quality.

Wildlife Habitat: management activities with a purpose to maintain and enhance the ecological needs of the diversity of wildlife species and habitat types.

Recreation and Cultural Heritage: management activities with a purpose to maintain and enhance areas that serve as visual, public camping, designated trails, and other high public use areas.

A. Special Management Projects Include:

1. **Continued Development of the Certified Potomac-Garrett State Forest Sustainable Forest Management Plan** - with special focus on addressing items identified as in need of improvement as a result of the FSC/SFI Certification Audits as well as updating of acreage figures ,affected by new acquisitions, field data, ground truthing, etc.
2. **ESA Management Plan Development** – Forest management staff has been working with with Natural Heritage staff to develop management plans for the 34 ESA areas identified on the forest. Progress has been made in this area, but it is not yet a finished product.
3. **Forest Stand Delineation, Inventory and Monitoring** – Extension of the 5-year project to re-inventory and redefine stands on the entire forest. With the initial effort to collect forest wide data completed and being utilized in all land planning efforts, inventory work will continue in the form of follow-up monitoring protocols associated with the initial inventory and certification requirements.

B. Land Management Projects Include:

- Continuation of the Ecosystem Restoration Project involving control of invasive, exotic plants forest wide.

-1 Wildlife Habitat Project affecting approximately 2.0 acres of scrub-shrub / forested wetland to improve habitat elements associated with the wetland and surrounding early successional habitat.

- 10 Silvicultural Projects including:

5 - Stands to undergo rehabilitation and restoration of very poorly conditioned stands on the Backbone Mountain Complex in Compartments 6, 11 & 12. This work will involve combining 5 adjoining stands of poor condition, totaling 224 acres being regenerated using patch clearcuts. Approximately half the acreage (112 ac.) will be harvested under this work plan, and the balance to be cut in 10 years.

2- Non-commercial Silvicultural practices to be done as “weeding” practices to promote regeneration and seedling establishment by controlling interfering, undesirable tall woody vegetation on 95 acres.

1- Shelterwood thinning to begin the regeneration process on 36 acres.

2- Regeneration harvests, involving overstory removal using clearcut with variable retention accounting for 44 acres.

Forest harvest operations are undertaken to utilize mature and dead/dying/diseased trees; to thin overstocked stands; to improve and diversify wildlife habitat; to effectively correct public safety concerns and issues; to reduce the forests vulnerability to insect attack, disease or wildfire hazard; to facilitate certain approved research needs; to improve certain aesthetic aspects of an area; and to improve the proportions of age class and species diversity within stands and management blocks. This forest has been intensively managed for over 100 years, utilizing both even and uneven-aged techniques via selective removals and regeneration harvests. Early records indicate that as cut over land was acquired, foresters ‘culled’ the forest, removing the poorly formed and damaged timber left behind in the wake of the cut and run practices employed by early timber speculators. By removing these undesirable trees, newly forming seedlings were released from competition and were thus cultured into the future growing stock of trees that we enjoy today. The benefits of this work have been significant including: improved wildlife habitat diversity, improved forest health and more abundant mast production, improved utilization of gypsy moth damaged trees, reduced forest fire hazard, and the considerable financial contribution to the State and local economies, as well as to those employed in the forest products industry.

Approximately 471,000 board feet of timber will be contracted for harvest in FY-20. The timber will put an estimated \$94,200.00 worth of raw wood products out into the local markets. Much of the silvicultural work laid out in this work plan is focused on initiating seedling development to better insure regeneration successes in future harvests. Much of the value of the harvests in the work plan will be directed back into the forest providing the essential investment in pre-harvest cultural work that will assure the long term sustainable management of these important forest resources.

The cultural operations and management projects outlined within the FY-20 Annual Work Plan are selected to provide significant contributions to sustainability of the forest resources found within the Potomac-Garrett State Forest and the ecosystems associated with it.

III. General Location Maps for FY-20 Land Management Proposals (Map Key)

Potomac State Forest Mapped Sites

Wildlife Proposals

1. **PG-2020-W-03** Comp. 12 Stand 4
(Regeneration via. patch clearcuts with wetland management to promote shrub expansion.)

Silvicultural Proposals (Potomac State Forest)

1. **PG-2020-S-01** Comp. 6 Stand 8 (Non-commercial TSI and patch cuts.)
2. **PG-2020-S-02** Comp. 11 Stand 16 (Regeneration via. patch clearcuts)

3. **PG-2020-S-03** Comp. 12 Stand 4 (Regeneration via. patch clearcuts)
4. **PG-2020-S-04** Comp. 12 Stand 7 (Regeneration via. patch clearcuts)
5. **PG-2020-S-05** Comp. 12 Stand 8 (Regeneration via. patch clearcuts)

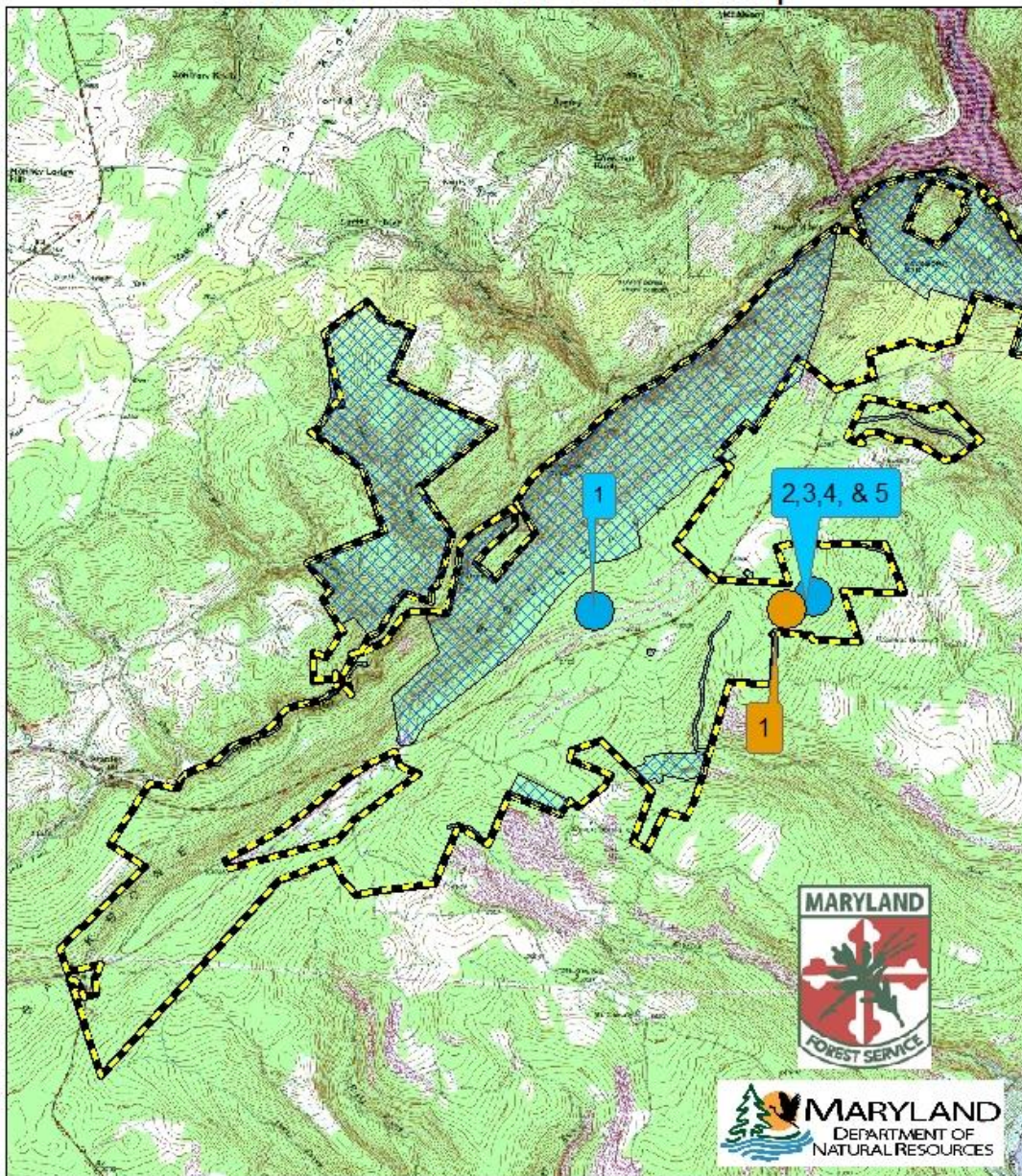
Silvicultural Proposals (Garrett State Forest)

6. **PG-2020-S-06** Comp. 31 Stand 5 (Weeding / treatment of interfering vegetation)
7. **PG-2020-S-07** Comp. 31 Stand 6 (Weeding / treatment of interfering vegetation)
8. **PG-2020-S-08** Comp. 34 Stand 9 (Begin regeneration via shelterwood thinning)
9. **PG-2020-S-09** Comp. 41 Stand 5 & 7 (Regenerate via overstory removal)
10. **PG-2020-S-09** Comp. 42 Stand 12 & 13 (Regenerate via overstory removal)

Recreation Proposals (Garrett State Forest)

1. **PG-2020-R-01 Snaggy Mountain ORV Trail Rehabilitation**

Potomac State Forest AWP-20 General Location Map

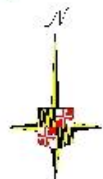


1:54,556

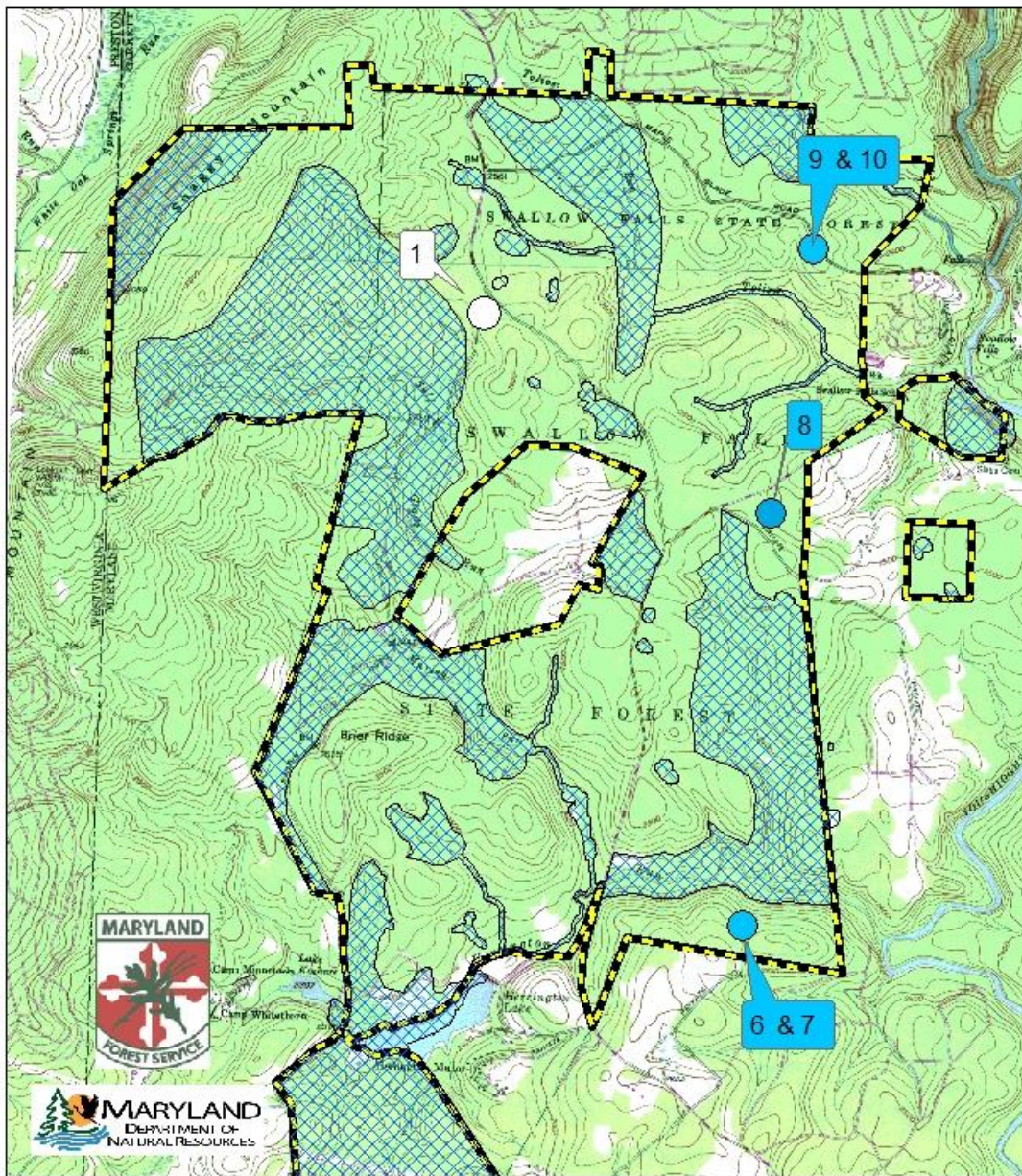
 High Conservation Value Forest (Total)

 = Silviculture Proposals

 = Wildlife Proposal




Garrett State Forest AWP-20 General Location Map



 High Conservation Value Forest (Total)

 = Silviculture Proposals

 = Recreation Proposal

1:38,911



IV. Special Projects - Forest Resource Management and Planning

A. Continued Development of the Certified Potomac-Garrett State Forest Sustainable Forest Management Plan

(This work is done with special focus on addressing items identified as in need of improvement as a result of 2018 FSC/SFI Certification Audits.)

Beginning in 2011, the Forest Service began revising the long term sustainable management plans for all three of the State Forests in the Western Region. The initial framework follows the sustainable management plan format established for the State of Maryland's Chesapeake Forest on the Eastern shore. The Department's goal is to have the updated sustainable forest management plans receive dual third party certification under both the Forest Stewardship Councils (FSC) and Sustainable Forestry Initiatives (SFI) standards and guidelines.

Broad resource assessments were carried out identifying the various management units and features located on the forests including identification and mapping of High Conservation Value Forest Areas (HCVF), much of which was formerly identified as the State Forests "Special Management Zone". Within the HCVF are located a broad range of Ecologically Significant Areas (ESA). These areas typically contain rare, threatened or endangered species and their critical habitats and management schemes for the ESAs on Potomac-Garrett State Forest are being developed in cooperation with DNR's Natural Heritage biologists. In spring of 2011 initial drafts of the Forest's Sustainable Management Plan were developed and shared with stakeholders for initial comment and review. The plans were submitted to both the FSC and SFI organizations in the spring of 2011, at which point audits have been completed on all three of the western State Forests. Following the audits, draft plans and audit findings were presented to the State Forests Citizen Advisory Committees for review and comments. The Draft Sustainable Management Plans were made available for public comment in the fall of 2011.

Each year the State Forests Management Program is audited for compliance to the standards set forth by the Certifying Organizations. Any shortcomings in the programs identified during the audits are identified in a Corrective Action Reports (CARs) and/or observations identified as being in need of improvement in order to be "certified" as sustainably managed forest lands under the internationally recognized FSC and SFI standards. These corrective actions vary from simple formal documentation of routine practices, to more complex policy and procedure development involving various stakeholders and partners. The program requires that all of these items be addressed before the next annual audit, with some needing more immediate attention. State Forest staff time and field operations are adjusted and redirected to assist in addressing these Corrective Action items in the course of the next year.

B. ESA Management Plan Development

Thirty-four Ecologically Significant Areas have been initially identified on PGSF. Each area harbors unique habitats and sensitive communities that generally contain RT&E species. These communities are in need of special conservation measures. In the winter of 2016, these areas were to have been reviewed with the region's Natural Heritage Biologist to develop site specific management plans to identify conservation measures appropriate for each ESA. This will be done in order that these significant features are not just assumed protected by steering direct management activity away from them, but rather actively identifying appropriate management practices that may increase the stability and long term existence of the communities and habitats that make up these ESAs. Progress has been made in describing and identifying individual management needs of many of the ESAs, however this project has not been completed. Forest Service Headquarters staff are working to see this project becomes a priority for DNR Wildlife and Heritage staff to complete these important plans in order that they be incorporated into the Potomac-Garrett State Forest Sustainable Forest Management Plan, as a reference document for the Forest Manager.

C. Forest Stand Delineation, Inventory and Monitoring

A critical part of developing long term sustainable management plans is the availability of up-to-date forest inventory data. To this end, the State Forests' staff has been fully engaged in revising the forest stand delineation on the forests. The process continues to consume considerable staff resources as this project is taking shape. This ambitious undertaking has involved collecting detailed inventory data on both overstory and understory conditions over the entire State Forest. The data has been collected and analyzed using the SILVA Inventory System developed by the USFS.

The project involved collecting information on some 22,200 sample points. As the data is collected during full leaf out seasons between hard frost dates, the working window is five months. The work force of skilled technicians available to us are generally college students that can only offer us three months work before returning to school. To this end, the project was expected to take 4-5 years to complete and cost approx. \$20,000/yr. Our two full time technicians lead and managed this special project on top of their full work load implementing the Annual Work Plan on the forest. The stand delineation and inventory project had resulted in the pulling of one man from his normal duties for the equivalent of approximately six months time each year of the project to serve as crew leader, provide project planning and processing data. Staff assignments and field operations had been adjusted to assure the timely and accurate completion of this important field level assessment that will serve as the basis which we will draw management decisions from for the next 10-15 years.

With the close of the 5th inventory season in FY-16, initial data collection has been completed on this stage of the forest monitoring program and processing of this data has been completed; from which we continue to draw upon for management planning direction. The demand for this important data set is increasingly evident as special projects evolving out of demands placed by Forest Certification Standards utilize portions of this data set for project planning. Examples include the NNIS Inventory and Control Project in the ESAs on Potomac State Forest, as well as each year's FY-Annual Work Plan.

What had historically been carried out on a 10-year interval, offering a ‘snap shot’ in time view of the forest, has evolved into a regular (annual) sampling approach that gives a more frequent look at overall forest condition throughout the years. This approach will allow a much closer watch on developing forest conditions and allows for a more rapid and timely response. This approach is especially valuable in light of the numerous and frequent introductions of foreign insects, diseases, and invasive plants that can rapidly disrupt forest systems. The initial ‘Stand Delineation and Inventory Project’ will be continued as a Forest Monitoring program as required under certification in order to allow for documented observations of changing conditions throughout the forest. Program focus will include: monitoring of developing regeneration sites allowing for the timely response to the investment in intensive silvicultural work such as herbicide control of invasive and interfering plants, fencing, and prescribed fire; NNIS monitoring and control work (beyond the special project area identified in this AWP); silvicultural results with respect to management objectives and outcomes and recreation / visitor impacts, etc.

V. Maintenance and Operations

Aside from the detailed cultural work planned for the State Forests, the following is a partial list of projects that are often on-going from year to year and are an integral part of State Forest operations.

A. Maintenance and Management of Roads and Trails

PGSF staff maintains 72.9 miles of roads and multi-use trails. This work is ever on-going. A lack of sufficient road maintenance budget makes the upkeep of this road and trail system a considerable challenge. A reduction in ORV Permit revenue has left a considerable void in the routine maintenance budget of the State Forest. In FY-13 \$12,000 from ‘ORV Permit Funds’ was budgeted for maintenance to ORV trails and primitive roads on PGSF. In subsequent years, the limited ORV Permit Funds available were redirected toward new trail construction on Savage River State Forest. Preliminary projections for FY-20 ORV Funds for PGSF are also zero. In order to attempt to meet this challenge, alternative sources are continuously sought to provide the necessary equipment, labor and materials required for the routine maintenance and improvements needed to sustain this aging and primitive transportation system.

In FY-19/20 maintenance staff will concentrate on carrying out planned trail maintenance as outlined in the National Recreation Trail Grant detailed in the Recreation Section of this plan. This will be carried out in addition to basic maintenance on the segments of multiple-use and motorized-use trails that have been rehabilitated using National Recreation Trail Grants over the past 5 years, along with routine maintenance of the roads and trails as outlined in the roads maintenance plan.

As a result of the State Forests Certification Audit, State Forest staff has developed a formalized transportation plan in which the entire transportation (road and trail) network has been inventoried and assessed for management, use, and maintenance needs. From this assessment, the State Forest Manager develops annual maintenance plans geared toward making the road and trail system sustainable. Information gathered for this plan is presently being used to prioritize

improvements to be made with the access trails grant referenced above, NRT Grant funds, Critical Maintenance Projects, etc. As work is contracted out, plans will be updated with regard to needs.

The 72.9 miles of roads and multi-use trails are classified by the desired use and condition and are broken down as follows:

17 miles of Class 1 – Year round, permanent, public vehicle access, high traffic areas (non primitive).

General description of these roads is an un-gated, hardened (stone surfaced) access road, with primary drainage provided by use of in-sloping, out-sloping, crowning, ditches, and culvert pipes. Road is designed to accommodate four season traffic.

These roads provide primary access to State Forest recreational-use areas, primarily camping areas and adjacent State parks.

4.4 miles of Class 2 – Year round, permanent, public vehicle access, low traffic areas (primitive).

General description of these roads is an un-gated, hardened (stone surfaced) access road, with primary drainage provided by use of in-sloping, out-sloping, crowning, ditches, and culvert pipes and ***broad based dips***. Road is designed to accommodate four season traffic.

These roads provide year round access to State Forest Areas other than camping areas. The primary difference between class 1 and class 2 roads is the standard at which the traveled surface is maintained. Class 2 roads will use the surface shaping as well as broad based dips, etc., to manage storm flows with ditches and culverts used to handle intermittent and perennial stream flow.

7.9 miles of Class 3 – Seasonal, gated, public vehicle access, low traffic areas (primitive).

General description of these roads is a gated, hardened (stone surfaced) access road, with primary drainage provided by use of in-sloping, out-sloping, crowning, ditches, and culvert pipes and ***broad based dips***. Roads are designed to accommodate four season traffic, but are only periodically opened to allow for seasonal access.

These roads are seasonally opened to provide hunting access to remote areas of the State Forest. Class 3 roads can include Handicapped Hunter Access Roads, as well as other roads that are opened to encourage hunter access.

These roads provide gate controlled seasonal access to State Forest areas. The primary difference between Class 2 and Class 3 roads is the gated access that is used to control the seasonal access. Class 3 roads will use the surface shaping as well as, broad based dips etc, to manage storm flows with ditches and culverts used to handle intermittent and perennial stream flow.

22.2 miles of Class 4 – Gated, service vehicle road (primitive).

General description of these roads is a gated, non-hardened access road, with primary drainage provided by use of in-sloping, out-sloping, crowning, broad based dips and ‘water breakers’ with minimal ditches, and culvert pipes. Road surface varies based on prior use and present needs; but may vary from minimal stone, to ‘seeded to game food’ to natural herbaceous cover. Roads are

designed to accommodate minimal 3 season traffic, and are used by agency staff to carry out work on the forest.

These roads provide gate controlled service access to State Forest areas. The primary difference between Class 3 and Class 4 roads is the surface condition and durability.

Class 4 roads will use the surface shaping as well as, broad based dips etc, to manage storm flows with ditches and culverts used to handle intermittent and perennial stream flow.

Mileage no longer tracked -Class 5 – Temporary/Retired

General description of these roads is a temporary access road, that will be closed to any vehicle access as it no longer serves a State Forest management needs, or roads that may have been retired to provide important sensitive resource protection. These roads have been abandoned after having been “put to sleep” or stabilized to prevent erosion and sedimentation. Road surface varies based on prior use and may vary from minimal stone to reverting to natural herbaceous cover.

These former roads are open to foot traffic only and in many cases may serve as a conduit for hunters or other backcountry users to gain access into remote forested areas. The primary difference between Class 4 and Class 5 roads is the lack of further maintenance on the abandoned Class 5 roads. As Class 5 roads are abandoned, there is no need to retain them on inventory.

Class 6 - Special use – Paved surfaces

Includes parking lots and driveway surfaces at the State Forest Headquarters (Office, shop and maintenance compound and paved pavilion areas.)

21.4 miles of Hiking Trails –Year round non-motorized use trails. These are designated hiking / and non-motorized use trails and generally include a larger component of ‘single track’, natural surface trail bed. Certain trails are designated ‘foot traffic only’ due to the sensitive nature of their locations.

B. Boundary Line Maintenance

PGSF has 130 miles of boundary line, including interior lines, exterior lines, and road frontage. Boundary maintenance is critical to the management of all public lands. In order to keep up with this effort, PGSF maintains approximately 30 miles of line each year. In addition to routine marking/painting, considerable effort is spent on researching relocating or establishing missing and/or new line, as well as addressing boundary conflicts. As conflicts arise, every effort is made to resolve the issue in a timely and professional manner. Often, this work leads to the need for a licensed surveyor and legal recourse in order to resolve the issue. Boundary work in FY-20 will focus on routine maintenance of located boundary lines.

C. Campground Operation and Maintenance

PGSF offers year round, primitive camping in five separate areas of the State Forest; Lostland Run Area, Laurel Run/Wallman Areas, Snaggy Mt. Area and Piney Mt. Area. Within each area is a 'group site', a rustic trail shelter and several primitive campsites offering a picnic table, lantern post/table and fire ring. From 2003-2009, vault toilets were installed in each of the five areas to improve sanitary conditions for campers and forest visitors. Campsites and trail shelters are available on a first-come, first-served basis. A self-registration kiosk is available at the entrance to each area. Additional seasonal staff is hired to operate and maintain the campgrounds during peak summer use to provide a quality camping experience.

Maintenance and operation of these primitive campsites includes: managing group site reservations; maintenance of information / bulletin boards; camper contacts to insure policies are understood; self registration fee collections and deposits; weekly site inspection and cleaning; hazardous tree evaluation and removals; grass mowing (typically the week before the summer holidays and otherwise as needed); maintenance and replacement of picnic tables, lantern posts, and fire rings; site impact monitoring.

D. 3-D Archery Range Maintenance and Management

PGSF offers the only 3-D Archery Range in the State's Public Lands System. The facility is located behind the State Forest Headquarters. The range offers a 30-target course, with four separate skill levels at each target. The facility is open April 1-Oct. 1, dawn to dusk.

Maintenance and operation of this facility includes: promotion of the facility; maintenance of information / bulletin boards; weekly inspection and cleaning; periodic maintenance and replacement of targets; hazardous tree evaluation and removals; brush removal as needed; site impact monitoring, annual overhaul and patching of targets; seasonal set up and take down for the off season.

E. Interpretation and Education

With limited staffing resources, interpretive efforts have been focused on Sustainable Forest Management Programs for targeted audiences using the interpretive features at the "Kindness Demonstration Area". Targeted audiences have been Agricultural and Natural Resource Leaders, Extension Service, Forestry Boards, forest land owners, and forest land managers. The facility is set up as a self-guided lesson in forestry and wildlife management practices, and is available to groups and individuals wishing to learn more about managing forests.

VI. Recreation Proposals

A. National Recreation Trails Grant Requests

Potomac-Garrett State Forest has submitted 1 National Recreation Trails Grant Request to fund enhancements to multiple use- recreation trails on the forests.

1. Snaggy Mountain ORV Trail Rehabilitation

Project cost: **\$115,688**
(\$92,472 Requested Grant funds + \$23,216 matching funds 'in kind'.)

This project involves stabilization and erosion control on the 3.7 mile Snaggy Mountain ORV Trail. The Snaggy Mountain ORV Trail is the main artery of access through the Snaggy Mountain Complex on Garrett State Forest. This trail directly connects (and serves as part of) the Snaggy Mountain Snowmobile trail (a multi-use trail), as well as 3 hiking trails including: the Watchable Wildlife Trail, the Maze Trail, and the Wilderness Ranch hiking trail. The Snaggy Mountain ORV trail also indirectly ties into the Garrett State Forests "5 ½ mile Hiking Trail" by way of the snowmobile trail.

Garrett Counties Tourism Based economy is heavily dependent upon the developed infrastructure of trails that provide access to thousands of acres of public forest lands and parks in the county. The state forests trails attract visitors to come and spend time and money within the communities surrounding the state forest. Our digital trail counters show that over the past 3 years, this particular trail serves approximately 10,158 visitors annually. A relatively small slice of our visitors utilize the primitive tent camp sites located along this trail, most of our trail users day trip on the trail network within the forest, and wrap up their day at local restaurants and bars, then turn in for the night at one of the many rental cabins found around the Deep Creek Lake area. This trail project will not only improve access opportunities for ORV Trail riders, but offers 4 season , multiple use access to the 5,499 ac. Snaggy Mountain Area and its associated trails noted earlier. More importantly, stabilizing and correcting the drainage of this trail bed will reduced erosion and sediment loading to adjoining streams and watercourses, thereby improving water quality.

Overall project length will be 3.7 miles. Work will involve reconstructing / rehabilitating 1.0 miles of trail from the intersection of Sanders Land north to Campsite #10, to include grading, shaping/crowning the tread way/trail bed, hardening the trails by installing 7 inches of compacted stone materials (2 ½"-dust) over muddy, unstable, trail bed, and topping this base material with 4 inches of compacted CR-6 stone (1 ¼"-dust). The remaining 2.7 miles will be graded, shaped, and crowned and resurfaces with 4" of Compacted CR-6 stone. All water management structures (ditches, drains, water diversions, crown, etc.) will be reshaped to restore their full function.

Snaggy Mountain ORV Trail Rehabilitation



VII. Ecosystem Restoration / Protection Projects

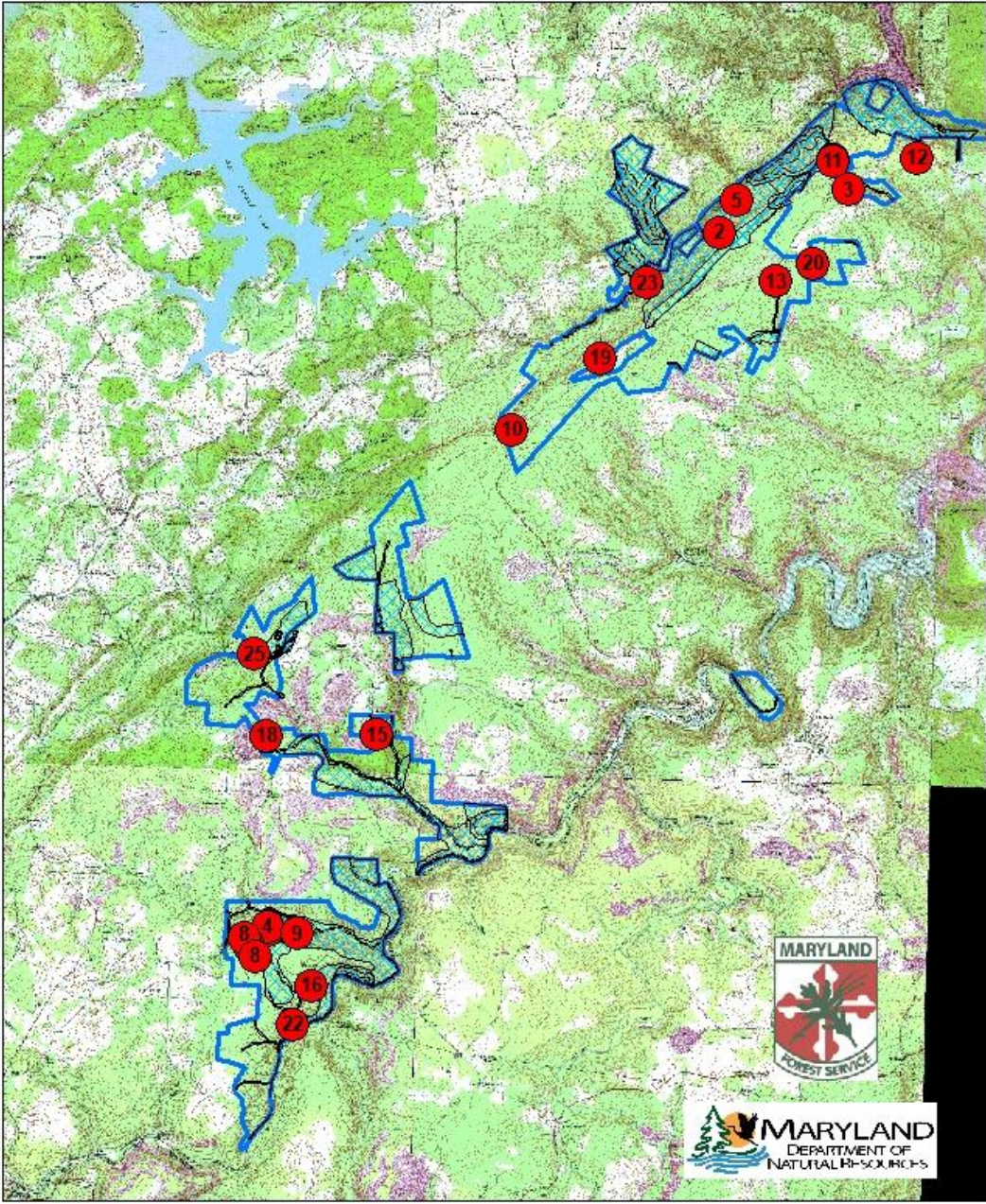
A. Non-Native Invasive Species (NNIS) Control

Across the State, a biological invasion of non-native plants is spreading into our fields, forests, wetlands and waterways. Various referred to as exotic, non-native, alien, or non-indigenous, invasive plants impact native plant and animal communities by displacing native vegetation and disrupting habitats as they become established and spread over time. Early Detection and Rapid Response (EDRR) to control the spread of problematic species is important for the conservation of our native flora and fauna. Control efforts often require considerable resources (labor, time and money). As in many cases, the introduction of these widespread and invasive plants cannot be prevented. It is important to evaluate and plan control efforts in order that such efforts contribute meaningfully to the success of forest conservation plans. EDRR efforts targeting NNIS discovered during the forest wide inventory have been successful in identifying and controlling a number of NNIS populations. State Forest staff has treated and are monitoring the following sites:

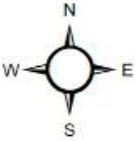
1. Tree of Heaven
2. Japanese Knotweed
3. Mile A Minute
4. Tree of Heaven
5. Tree of Heaven
6. Japanese Knotweed
7. Japanese Spirea
8. Tree of Heaven
9. Tree of Heaven
10. Japanese Knotweed
11. Japanese Knotweed
12. Japanese Knotweed
13. Mile A Minute
14. Japanese Barberry
15. Oriental Bittersweet
16. Tree of Heaven
17. Tree of Heaven
18. Tree of Heaven
19. Japanese Knotweed
20. Japanese Spirea
21. Tree of Heaven
22. Tree of Heaven
23. Japanese Knotweed
24. Tree of Heaven
25. Tree of Heaven
26. Tree of Heaven

These aggressive non-native invasive plants are found throughout Garrett County, but are not considered to be established on PGSF. The small colonies are now part of our long term monitoring program, with follow-up treatments planned as necessary in the interest of preventing these species from establishing themselves in the otherwise natural forest communities in which they were found.

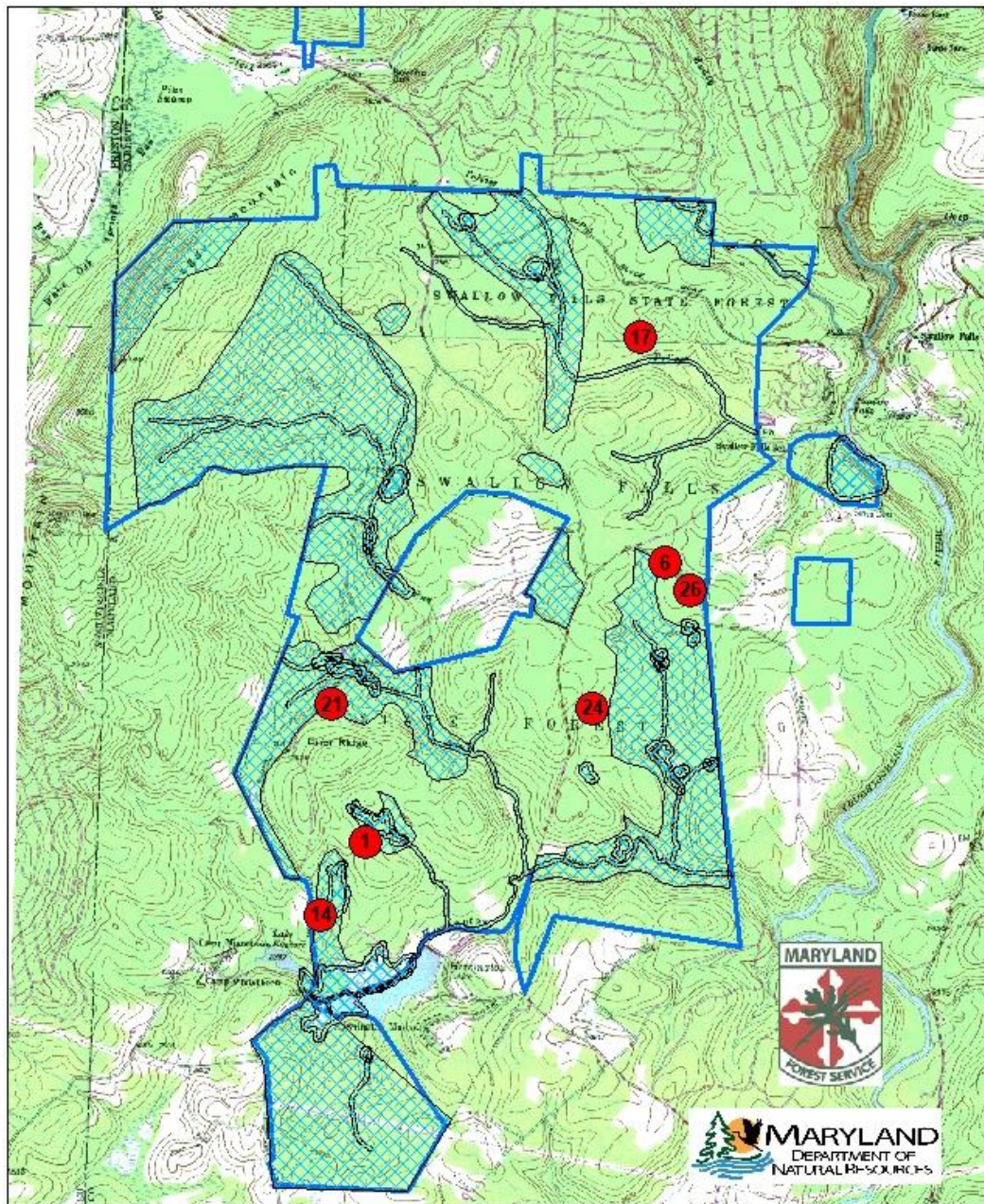
Potomac State Forest
N.N.I.S. Monitoring Sites



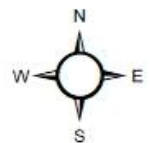
- Monitoring Sites
- High Conservation Value Forest (Total)



Garrett State Forest N.N.I.S. Monitoring Sites



- Monitoring Sites
- High Conservation Value Forest (Total)



VIII. Wildlife Management Proposals

COMPARTMENT 12 Stand 4

FY-20

Description/Resource Impact Assessment

Location: This area is located on the Backbone Mountain Complex in Compartment 12, Stand 4 of the Potomac State Forest. The stand lies along the Backbone Mountain Handicapped Hunter Access Road, at the “T” intersection, 0.5 miles from the gated entrance along Route 135.

Forest Community Type and Condition: This 20-acre site contains a mature, 100 year old Alleghany Hardwoods stand with an average merchantable diameter of 13.6”. The over story is made up primarily of Red Maple (31%), Sugar Maple (22%), Black Cherry (12%) and Northern Red Oak (12%). There is also a limited amount of dead and dying Ash at (3%) of the BA. This stand is well under stocked at only 42% relative density, and contains 61 sq.ft.of BA, of this, 46 sq.ft.BA is considered acceptable growing stock. This understocked stand only contains approximately 1,600-1,800 bd. Ft. /acre.

Advanced regeneration is very minimal; no sample plots show as being “stocked”. The heavily developed understory of Witch-hazel (which occupies nearly 92% of the stand) has restricted any further seedling development without some outside influence. There is no other significant plant interference impeding regeneration efforts, and no non-native invasive species (NNIS) were observed in the stand inventory.

This forest stands most significant feature is the approximately 2-acre palustine scrub-shrub/forested wetland that divides the stand from north to south in the eastern 1/3 of the tract. This narrow 60-100 ft. strip contains various wetland shrubs including: Black Willow, Red Osier Dogwood, Winterberry Holly, and Hazelnut as well as various grasses sedges and ferns associated with this community type. The surrounding hardwoods are growing right up to the hydrologic limits of the wetland, and this over story shade appears to be limiting the shrub community’s full development. The wetland drains to an unnamed tributary of Folly Run within the Potomac River Watershed.

Historic Conditions: The southern half of this stand had been under contract for a pulpwood / TSI thinning in 1989 from this valuable young mixed oak forest. At that time, Gypsy Moth populations had begun to build and the stand was subjected to several years of partial defoliations. The area was sprayed for Gypsy Moth control in 1989, 91 and 94. The northern half of this stand had been thinned in 1999 and yielded 8,000 bd. Ft./acre, 78% being mixed oaks. In October of 2002, Garrett County was hit with a major ice storm. Damage to the forest was wide spread, with the worst damage occurring between 2,300 and 3,000 feet in elevation where this stand falls. The prior thinnings in this stand left it particularly vulnerable to this ice damage.

Following the stresses of the 2002 ice storm, droughty conditions occurred during the next two summers (2003 & 2004) further stressing these high elevation forests. In 2005, 06 and 07

Gypsy Moths literally blew in and blew-up, warranting additional spray treatments within the Complex, though not in this stand as the Oak component was all but gone by this time.

Rare, Threatened and Endangered Species: The Forest Manager knows of no rare, threatened or endangered species on the site or impacted by the silvicultural prescription.

Habitats and Species of Management Concern: There are no known habitats or species of management concern on this site.

Water Resources: A prominent feature in this stand is the approximately 2-acre palustine scrub-shrub/forested wetland that divides the stand from north to south in the eastern 1/3 of the tract. The wetland drains to an unnamed tributary of Folly Run within the Potomac River Watershed.

Recreation Resources: Hunting is the primary recreational activity in this stand, as it fronts the Backbone Mountain Handicapped Hunter Access Road. There are no other developed recreational resources within or immediately adjacent to the management area

Soil Resources: Underlying soils include: 'Dekalb and Gilpin very stony loams' and "Cookport and Ernest very stony silt loams' . These soils are generally moderately deep and well drained *with inclusions of some poorly drained soils, with moderate equipment limits because water table is close to the soil surface in winter and in early spring.* Degree of slope ranges from 0-25% throughout the site. The site has good to very good productivity for woodland management, with site index for upland oaks ranging from 65-85 across the stand.

Management and Silvicultural Recommendations

The planned silvicultural treatment for this site is to move toward restoring site productivity by regenerating the stand using a series of patch clearcuts. This practice will provide for the harvest of only 1,600-1,800 Bd. Ft. per acre, making this tract nearly unmerchantable (not having sufficient volume to support commercial harvest.) Our goal to include this acreage in a single collective harvest across the surrounding stands, allowing the more merchantable work to help carry the restoration harvest of this degraded stand. As the overall condition and regeneration potential of this stand is particularly challenged, area wide 'variable retention' goals will not be accounted for, within the patch cuts in this stand. Every live tree cut in this stand is important for its potential contribution of high quality stump sprout regeneration in attempting to restore this very poor conditioned stand. Retention goals will be accounted for in adjacent stands.

The dense understory of Witch-hazel will be removed through one of several options; the first being by the commercial logging contractor harvesting the timber either cuts it at ground level, or preferably grubs it out of the ground to lessen sprouting. There may be some opportunity for non-commercial TSI type work using post harvest, herbicide spot treatment applications.

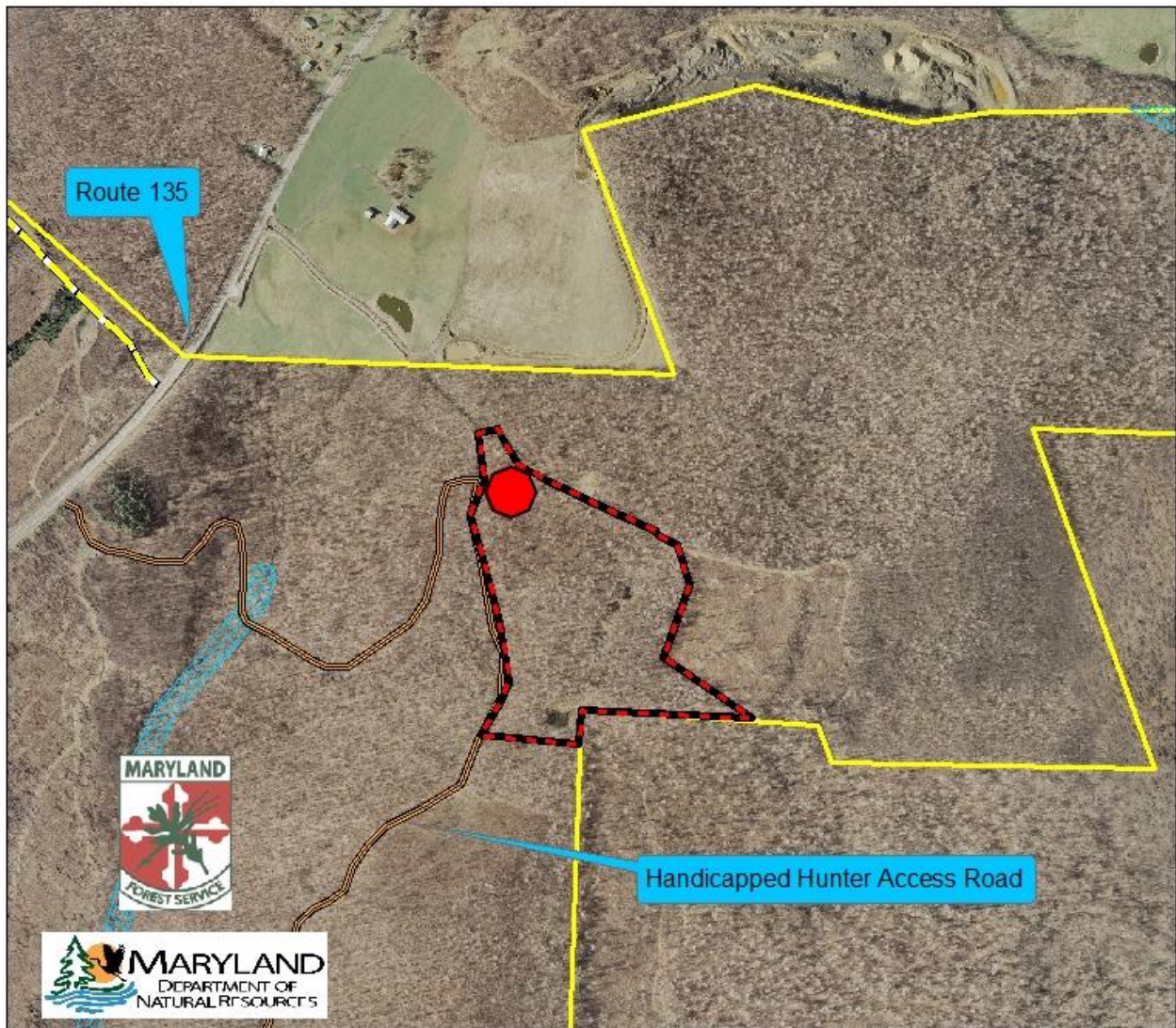
Deer impacts will also be addressed in the contract. The harvest will be managed to retain high tops and lops from cut trees to offer some deer browse protection to developing seedlings and critical stump sprouts.

In addition to the silvicultural work, wildlife habitat improvements are also proposed: The planned habitat management for this stand will focus on expanding the wetland scrub-shrub habitat community within the stand. With the surrounding forest encroaching and crowding out the scrub-shrub community, the plan is to provide a transitioning, soft edge between the maturing hardwood forest and the small high elevation wetland. A 100 ft. strip will be clearcut, with all trees 2" and greater to be cut; allowing the scrub-shrub plant community to expand to its hydrologic limits within this opening. In order to increase wildlife cover values, only the few merchantable saw logs will be removed from the site; all other material will be left to lie high upon the ground offering very dense, protective nesting and brooding cover to small birds and mammals, while also restricting deer browse on the regenerating stump sprouts and shrub seedlings. To further assure shrub community expansion, seedlings and cuttings may be planted among the available open areas along the forest/wetland edge.

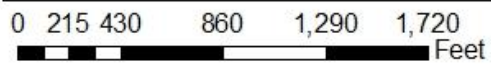
This practice will not only provide the wetland shrub community a chance to expand to its limits, it will also provide an extension of the early succession habitat conditions found within the wetland by providing a transition from the wetland /shrub community to new, young forest cover, and then into older forest in the adjacent stands.

The combined silvicultural work and wetland / wildlife habitat work will complement one another in providing outstanding early succession habitat conditions suited to a number of both game and non-game species while restoring this degraded forest to its sustainable, productive site potential once again.

Compartment 12 Stand 4 FY-2020



| | |
|------------------------|-------------------|
| Stand Acres..... | 20 |
| Harvestable Acres..... | 15 |
| Forest Type..... | Northern Hardwood |
| Basal Area..... | 61 |
| BA AGS..... | 12 |
| Stocking..... | 42% |
| Site Index..... | 60 for Red Oak |
| Composition..... | Red Maple 19% |
| | Sugar Maple 14% |
| | Black Cherry 7% |



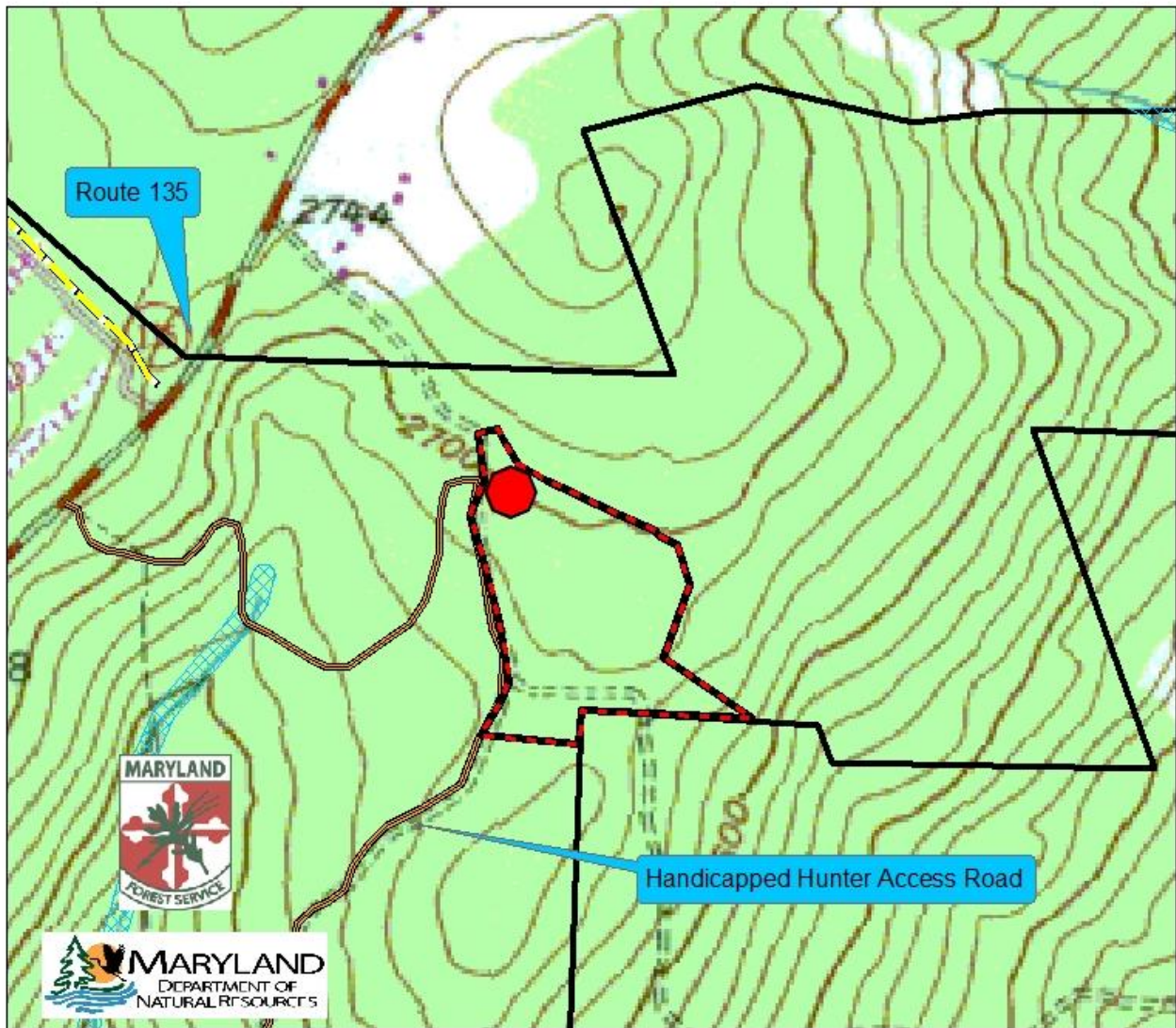
HCVF Components

- Wildlands
- Ecologically Significant Area
- Old Growth w/ 300' Buffer
- Old Growth Management Unit
- Wetland of State Concern w/ 100' Buffer
- Streams w/ 50' Buffer

79°9'29.737"W 39°28'23.729"N



Compartment 12 Stand 4 FY-2020



| | |
|------------------------|-------------------|
| Stand Acres..... | 20 |
| Harvestable Acres..... | 15 |
| Forest Type..... | Northern Hardwood |
| Basal Area..... | 61 |
| BA AGS..... | 12 |
| Stocking..... | 42% |
| Site Index..... | 60 for Red Oak |
| Composition..... | Red Maple 19% |
| | Sugar Maple 14% |
| | Black Cherry 7% |

0 215 430 860 1,290 1,720 Feet

HCVF Components

- Wildlands
- Ecologically Significant Area
- Old Growth w/ 300' Buffer
- Old Growth Management Unit
- Wetland of State Concern w/ 100' Buffer
- Streams w/ 50' Buffer

79°9'29.737"W 39°28'23.729"N



IX.Silvicultural Proposals

Backbone Mountain Complex - Stand Rehabilitation and Restoration COMPARTMENTS 6, 11 & 12

Over the past 30 years, the forests on the Backbone Mountain Complex of Potomac State Forest, particularly those at the highest elevations, have been subjected to a considerable number of outside stressors and factors resulting in rather rapid degradation of the condition, composition, productivity and sustainability of many of the stands in this complex. During the late 1980s many of the immature 70 -80 year old stands were being harvested. Annual Work Plans at this time primarily called for thinnings and timber stand improvement (TSI) type cuts. These practices were prescribed with the intent of making an intermediate, commercial harvest of timber, while providing the best trees in these young overstocked stands more growing space, thereby improving the health and vigor of the stand. However, any partial harvest causes some initial stress to the residual forest, before the trees rebound and reap the benefits of the additional growing space. This initial stress is soon outweighed by the longer term health benefits of these improvement type harvests; unless it is compounded by additional stressors, as was the case over much of this area.

In the late 1980s and early 90s, Garrett County saw widespread infestations and subsequent defoliations by the Gypsy Moth. Much of the Backbone Mountain Complex was sprayed repeatedly to suppress this insect pest in efforts to reduce damages among these valuable oak forests. Large blocks were treated in 1989, 1991, and 1994. Overall, these treatments were effective in protecting these important oak forests, though there was a considerable increase in oak mortality throughout the Complex. With Gypsy Moth held at bay, stands began to slowly recover from the defoliating insect infestations.

In October of 2002, Garrett County was hit with a major ice storm. Damage to the forest was wide spread; much of the worst damage occurred between 2,300 and 3,000 feet in elevation, a band that includes most of the Backbone Mountain Complex. Some of the worst damage occurred in stands that had been previously thinned as the extra growing space provided by the thinning had removed otherwise touching limbs that offered structural support to one another as the ice laden limbs sagged in against their neighbors. Trees in thinned stands had many limbs ripped from the crowns. State Forest staffs began a triage of the most vulnerable stands and began planning for the salvage harvests of the stands subjected to the worst damage.

Droughty conditions occurred during the next two summers (2003 & 2004) further stressing these high elevation forests. And, if that was not enough, in 2005, 06 and 07 Gypsy Moths literally blew in and blew-up, warranting additional spray treatments within the Complex.

In 2016/17 the Emerald Ash Borer arrived on the Backbone Mountain Complex. In the past 2 years, much of the White Ash found throughout the Complex has become infested and will be dead before this Annual Work Plan is put into effect. While the White Ash component of the Potomac State Forest is relatively small, it is another loss of an important forest tree, resulting in further degrading this forests overall health and condition; making it even more difficult to restore the productivity of these severely damaged forest stands.

Management Recommendation:

Many of the stands subject to the multiple stressors noted here, simply do not fit traditional silvacultural models or systems for effective, productive forest management. In many cases the conditions thrust upon the stands did not, and do not allow for the necessary development of abundant seedling stocks that could be further cultivated into a fully stocked young forest, capable of completely occupying the available growing space.

The 2020 AWP will concentrate on rehabilitating several of these poor conditioned saw timber stands including 11-16, 12-4, 12-7, 12-8 and 6-8. These stands are all connected and had been affected by similar suite of adverse conditions over the past few decades. Planned silvacultural work will involve regeneration of these stands, using the principles of variable retention, within a patch clearcut network, distributed across the collective area of these stands. Retention goal of 5% of the collective stands area will include larger stream buffer areas, as well as single and groups of trees offering important wildlife habitat elements. The area will be regenerated over a 10-year window using two separate harvests, spread 10 years apart with the first harvest being carried out in FY2020. This first entry will regenerate approximately half of the manageable acreage, with the area being divided into numerous patch clearcuts, 3-10 acres in size. The second harvest is to be carried out in approximately 10 years, as 2020's seedling sapling cover begins to progress into a small pole stand and begins to lose much of its early succession habitat values. The second harvest will capture the remaining unharvested acreage, excepting that which is held as variable retention to provide such things as stream buffers, important wildlife habitat elements and natural heritage values.

In general, the affected area will be viewed as an early succession management unit with the objective of regenerating the area by taking advantage of stump sprout potential of the present poorly formed, storm damaged growing stocks, as well as releasing the limited seedlings present in the understory. As Witch-hazel is the pervasive interfering tall woody debris restricting understory development, efforts will be taken to reduce its impacts by mechanically removing much of these stems.

The overriding goals for this area are: begin to restore timber stand productivity; improve stand composition and condition; and provide important, high quality, early succession habitat conditions at a larger, landscape level. By stepping away from conventional individual stand level management and looking at Compartment level needs, these stands should: 1) Be restored to a productive, healthy condition via commercial timber harvests. 2) See reduced potential for deer browse impacts by overwhelming the browse demands of the local deer herd with larger acreage. 3) Provide landscape level habitat conditions that are more attractive to broader populations of wildlife.

Individual stand details and specific prescriptions follow.

Description/Resource Impact Assessment

Location: This area is located on the Backbone Mountain Complex in Compartment 6, Stand 8 of the Potomac State Forest. The stand fronts MD Route 135, beginning at the State Forests Burkholder Road, and runs west approximately 1.25 miles.

Forest Community Type and Condition: This 165-acre site was set up as a series of strip clearcuts and block cuts, with harvests carried out in 1972, 1996, 2002, and 2009. The harvest history has created something of an uneven-aged / even-aged stand, with an unusual age and size distribution across the stand; this structure being more typical of uneven-age forests, despite the use of even age (clearcutting) methods for development. The regular short term entries have resulted in a diversity of young age classes being represented in this unit; offering very good early succession habitat conditions on a larger scale than is typically found on the Potomac-Garrett State Forest.

In keeping with the theme of stand restoration, this proposal will concentrate on the pole timber strips that are 46 and 22 years of age resulting from the regeneration cuts carried out in 1972 and 1996. The areas, harvested in 2002 and 2009 had been regenerated after the 2002 ice storm and are in better overall condition.

The 1972 and 1996 stands collectively contain 46 acres of pole timber sized, 22-46 year old mixed hardwood forest. The average diameter is 7.7 inches. The over story is made up primarily of Red Maple (23%), Northern Red Oak (22%) and Black birch (14%). This stand is well under stocked at 49% relative density, and contains 59 sq.ft.of BA. Only 19 sq.ft.BA is considered acceptable growing stock (AGS); this due largely to the crooked main stem conditions resulting from the ice storm of 02, as well as the late October snow storm of 2012. Both of these storms had devastating impacts to stem quality of these young stands that could not support the heavy loads, but were flexible enough to not completely snap off. In this poorly developed pole stand, regeneration data was not collected for consideration.

Historic Conditions: This stand had been set up as a series of strip clearcuts and block cuts, with harvests cut in 1972, 1996, 2002, and 2009. In the late 80's and early 90's, Gypsy Moth populations had begun to build and the 1972 strips of 8 year old seedlings and saplings were subjected to several years of partial defoliations though this area did not receive pest control treatments. One can surmise that the 1996 strip cuts were at least partially driven by salvage efforts. In October of 2002, Garrett County was hit with a major ice storm. Damage to the forest was wide spread, with the worst damage occurring between 2,300 and 3,000 feet in elevation where this young stand falls. As previously noted, these very young stands suffered considerable long lasting damage as the stems were often terribly bent, or in many cases tops were broken out leading to crooked and or multi-stemmed trees with no future timber value.

Following the stresses of the 2002 ice storm, droughty conditions occurred during the next two summers (2003 & 2004) further stressing these high elevation forests. In 2005, 06 and 07 Gypsy Moths literally blew in and blew-up, warranting additional spray treatments within the Complex, though not in this stand as the Oak component was all but gone by this time.

One final damaging natural event worth noting in this history is the October snow storm of 2012 (aka. Super Storm Sandy). Most of the damage from this major early snow event was related to forest edges; especially along roads where trees came crashing down as they didn't have support of neighboring trees to keep them upright. However, the heavy snow loads also had long lasting impacts to the youngest stands such as these pole and sapling stands. As in the ice storm of 02, smaller trees often bent under the weight of the snow, but were flexible enough not to snap, resulting in crooked deformities that render the tree unmerchantable forever after being recognized as "unacceptable growing stock." (UGS)

Rare, Threatened and Endangered Species: The Forest Manager knows of no rare, threatened or endangered species on the site or impacted by the silvicultural prescription.

Habitats and Species of Management Concern: The stand falls below the ESA, known as the Backbone Crest. Three previous harvests have been laid out beneath this ESA which is set aside for the protection of Wood rats, porcupines, bobcat dens and remnant Old Growth Forest stands.

Water Resources: There are no known water resources on the site. This ridge top site, drains down to the storm water ditches along Route 135, and run to unnamed tributary of Folly Run, within the Youghiogheny River Watershed.

Recreation Resources: Hunting is the primary recreational activity in this stand. A short section of the Backbone Mountain Snowmobile Trail runs through the south-eastern corner of the stand and runs with the Burkholder Road that bounds the eastern edge of the stand.

Soil Resources: Underlying soils include: 'Dekalb and Gilpin very stony loams' and "Dekalb and Leetonia very stony sandy loams'. These soils are generally moderately deep and well drained. Degree of slope ranges from 0-25% throughout the site. The site has fair to good productivity for woodland management, with site index for upland oaks ranging from 55-65 across the stand.

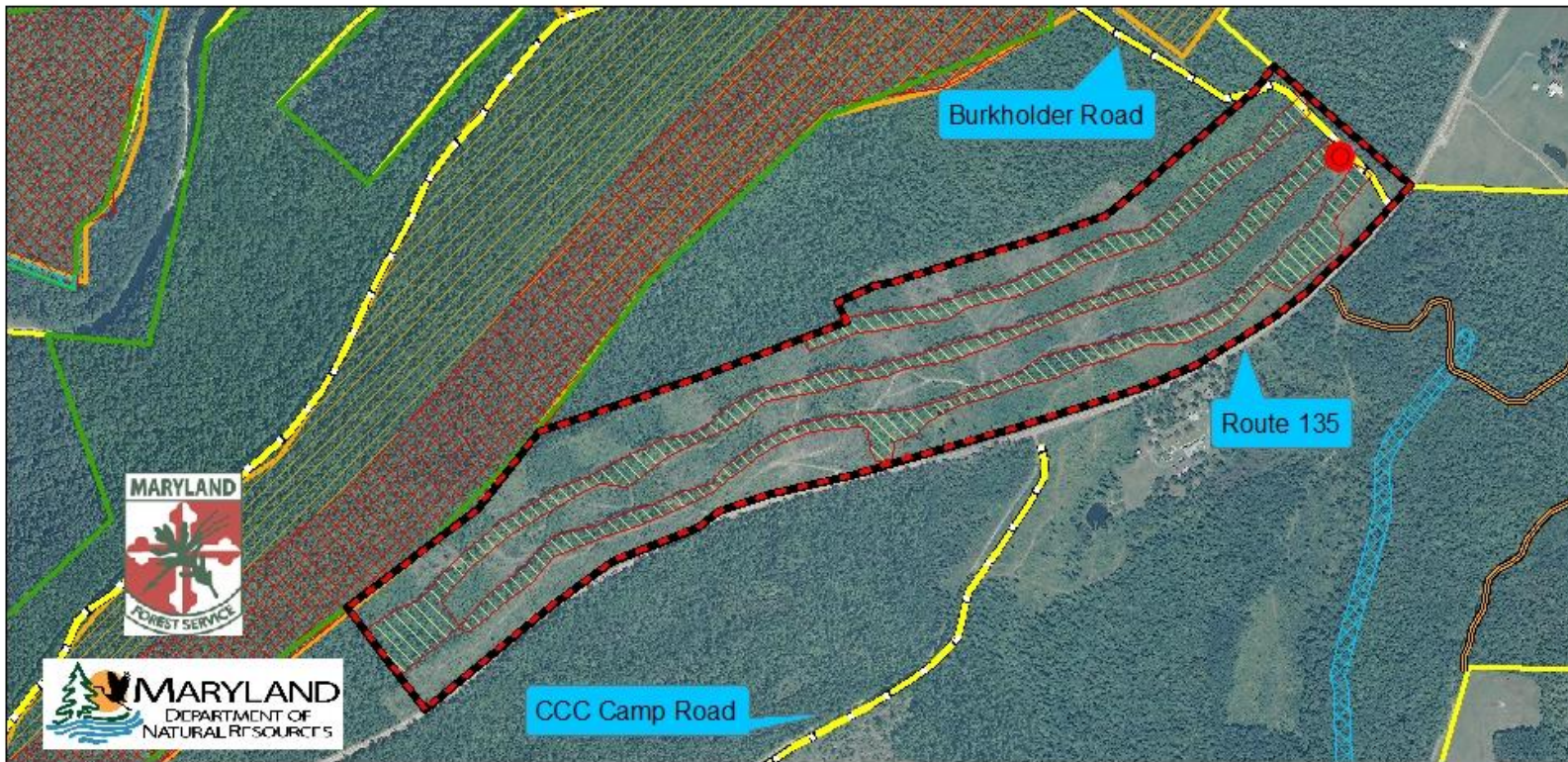
Management and Silvicultural Recommendations

In keeping with the stand rehabilitation theme of this Annual Work Plan, effort will be made to restore some future, merchantable value to these poor conditioned, under stocked hardwood strips. As much of the stems are too small to be utilized as pulpwood, the overall volume is insufficient to support a commercial harvest to start these stands over.

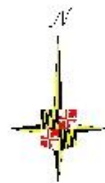
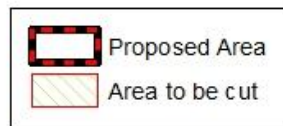
The proposed course of action will be to seek outside funding, support and interest to carry out a non-commercial timber stand improvement practice that will focus on cutting the unacceptable growing stock (UGS) from the stand, with the goal of regenerating “acceptable growing stock”(AGS) hardwoods from stump sprout reproduction. The expectation will be that approximately $\frac{1}{3} - \frac{1}{2}$ of the stand (including nearly all of the UGS) will be cut and left in the woods to provide both additional wildlife cover, and deer browse protection to developing sprouts and seedlings. The resulting patchwork of regenerating hardwoods will add another age class to the mosaic of early succession habitats in this stand; available to the suite of species dependant upon young forest conditions.

This ambitious undertaking is fully dependant upon finding partners and funding sources to make this possible.

Compartment 6 Stand 8 FY-20



| | |
|------------------------|----------------|
| Stand Acres..... | 165 |
| Harvestable Acres..... | 46 |
| Forest Type..... | Mixed Oak |
| Basal Area..... | 59 |
| BA AGS..... | 40 |
| Stocking..... | 49% |
| Site Index..... | 50 for Red Oak |
| Composition..... | Red Maple 23 % |
| | Red Oak 22 % |
| | Birch 14 % |



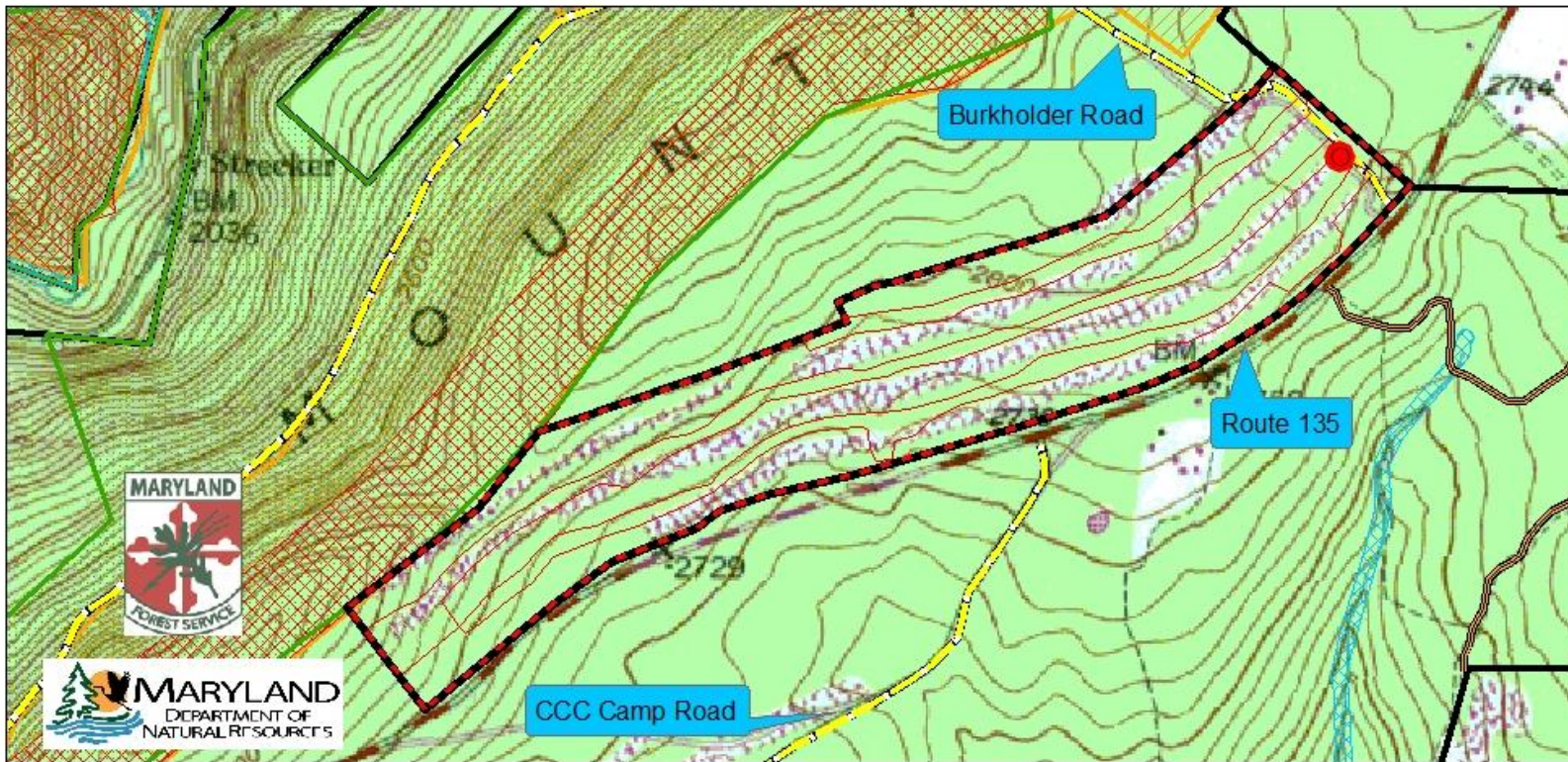
HCVF Components

- Wildlands
- Ecologically Significant Area
- Old Growth w/ 300' Buffer
- Old Growth Management Unit
- Streams w/ 50' Buffer

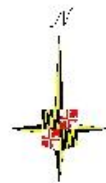
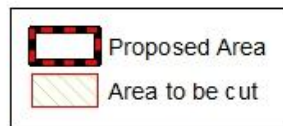
79°9'54.868"W 39°28'31.701"N

0 335 670 1,340 2,010 2,680 Feet

Compartment 6 Stand 8 FY-20



Stand Acres.....165
 Harvestable Acres.....46
 Forest Type.....Mixed Oak
 Basal Area.....59
 BA AGS.....40
 Stocking.....49%
 Site Index.....50 for Red Oak
 Composition.....Red Maple 23 %
 Red Oak 22 %
 Birch 14 %



HCVF Components

- [Orange diagonal lines] Wildlands
- [Red cross-hatch] Ecologically Significant Area
- [Green diagonal lines] Old Growth w/ 300' Buffer
- [Green grid] Old Growth Management Unit
- [Blue cross-hatch] Streams w/ 50' Buffer

79°9'54.868"W 39°28'31.701"N

0 335 670 1,340 2,010 2,680
 Feet

Description/Resource Impact Assessment

Location: This area is located on the Backbone Mountain Complex in Compartment 11, Stand 16 of the Potomac State Forest. The stand lies along the north side of the Backbone Mountain Handicapped Hunter Access Road, beginning at the culvert crossing the headwater tributary of Folly Run, and running to the “T” intersection, 0.5 miles from the gated entrance along Route 135.

Forest Community Type and Condition: This 20-acre site contains a mature, 110 year old Alleghany Hardwoods stand with an average merchantable diameter of 12.8”. The over story is made up primarily of Red Maple (44%), Sugar Maple (23%), and Black Cherry (13%). This stand is well under stocked at only 49% relative density, and contains 72 sq.ft. of BA, of this, 16 sq.ft. BA is considered acceptable growing stock.

Advanced regeneration is minimal with only 29% of the stand being stocked with saplings; these being mainly storm damaged Red Maple. Tall woody interference is impeding seedling development, as a heavily developed understory of Witch-hazel (which occupies nearly 79% the stand) has restricted any further seedling development without some outside influence. There is no other significant plant interference impeding regeneration efforts. The non-native invasive species Garlic mustard is present in and around this stand.

Historic Conditions: The western half of the stand had been thinned in 1988 as a pulpwood/ TSI harvest. At that time, Gypsy Moth populations had begun to build and the stand was subjected to several years of partial defoliations. The area was sprayed for Gypsy Moth control in 1989, 91 and 94. The eastern half of this stand had been thinned in 1999 and yielded 8,000 bd. ft/acre (78% of that being mixed oak) from what was a valuable young mixed oak forest. In October of 2002, Garrett County was hit with a major ice storm. Damage to the forest was wide spread, with the worst damage occurring between 2,300 and 3,000 feet in elevation where this stand falls. The prior thinnings in this stand left it particularly vulnerable to this ice damage.

Following the stresses of the 2002 ice storm, droughty conditions occurred during the next two summers (2003 & 2004) further stressing these high elevation forests. In 2005, 06 and 07 Gypsy Moths literally blew in and blew-up, warranting additional spray treatments within the Complex, though not in this stand as the Oak component was all but gone by this time.

Rare, Threatened and Endangered Species: The Forest Manager knows of no rare, threatened or endangered species on the site or impacted by the silvicultural prescription.

Habitats and Species of Management Concern: There are no known habitats or species of management concern on this site.

Water Resources: This site is drained by an unnamed tributary of Folly Run within the Potomac River Watershed. All wetlands and streams will be buffered according to the guidelines within the PGSF Sustainable Forest Management Plan.

Recreation Resources: Hunting is the primary recreational activity in this stand, as it fronts the Backbone Mountain Handicapped Hunter Access Road. There are no other developed recreational resources within or immediately adjacent to the management area

Soil Resources: Underlying soils include: “Cookport and Ernest very stony silt loams”. These soils are generally moderately deep and well drained with inclusions of some poorly drained soils, with moderate equipment limits because the water table is close to the soil surface in winter and in early spring. Degree of slope ranges from 8-25% throughout the site. The site has good to very good productivity for woodland management, with site index for upland oaks ranging from 75-85 across the stand.

Management and Silvicultural Recommendations

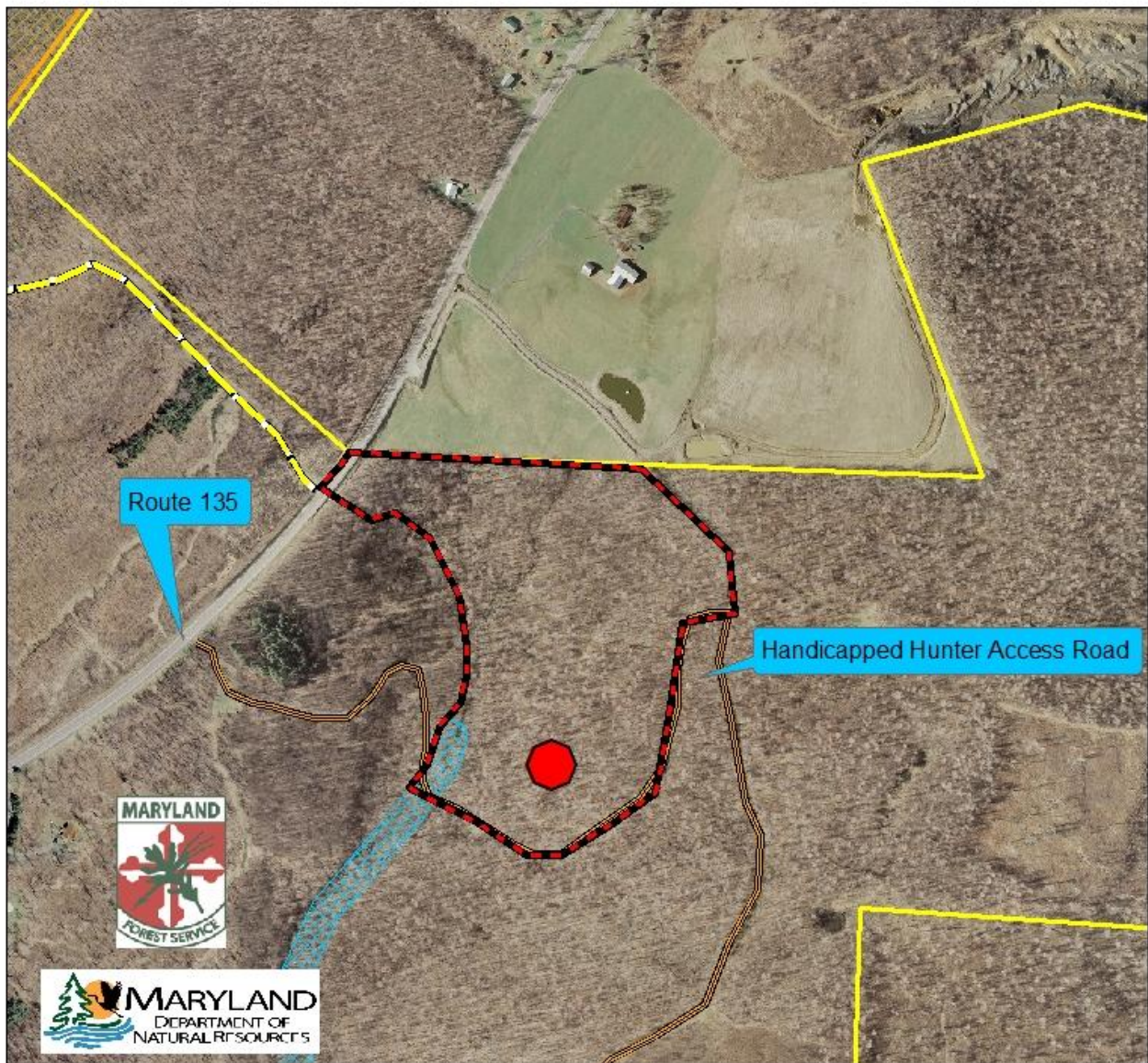
The planned silvicultural treatment for this site is to move toward restoring site productivity of this high quality growing site by regenerating the stand using a series of patch clearcuts in which all trees 2”DBH or greater will be cut. Every live tree cut in this stand is important for its potential contribution of high quality stump sprout regeneration in attempting to restore the productivity of this high quality growing site. As the overall condition and regeneration potential of this stand is particularly challenged, area wide ‘variable retention’ goals will not be accounted for, within the patch cuts in this stand. The 5% retention goals will be accounted for in stream buffers to be retained along the Folly Run tributary in the stand.

This practice will provide for the harvest of only 1,200-1,400 Bd. Ft. per acre, making this tract all but unmerchantable (not having sufficient volume to support commercial harvest.) Our goal is to include this acreage in a single collective harvest across the surrounding stands, allowing the more merchantable work to help carry the restoration harvest of this degraded stand.

The dense understory of Witch-hazel will be removed through one of several options. One option is to have the commercial logging contractor either cut it at ground level, or preferably grub it out of the ground to lessen sprouting. There may be some opportunity for non-commercial TSI type work using post harvest, herbicide spot treatment applications.

Deer impacts will also be addressed in the contract. The harvest will be managed to retain high tops and lops from cut trees to offer some deer browse protection to developing seedlings and critical stump sprouts.

Compartment 11 Stand 16 FY-20




| | |
|------------------------|------------------|
| Stand Acres..... | 20 |
| Harvestable Acres..... | 15 |
| Forest Type..... | Mixed Oak |
| Basal Area..... | 72 |
| BA AGS..... | 16 |
| Stocking..... | 49% |
| Site Index..... | 60 for White Oak |
| Composition..... | Red Maple 53% |
| | Sugar Maple 44% |
| | Black Cherry 13% |

HCVF Components

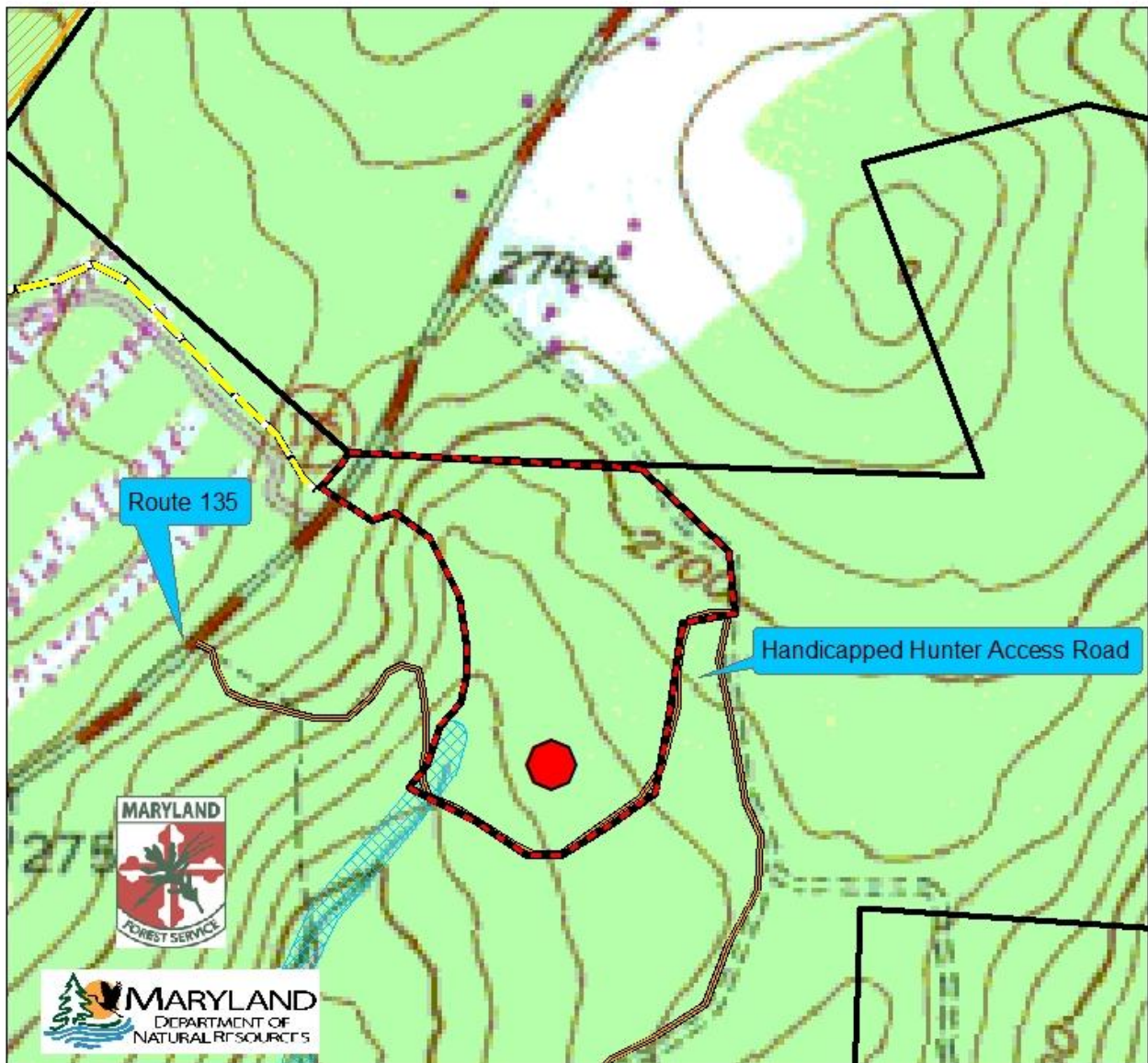
-  Wildlands
-  Ecologically Significant Area
-  Old Growth w/ 300' Buffer
-  Old Growth Management Unit
-  Wetland of State Concern w/ 100' Buffer
-  Streams w/ 50' Buffer

0 165 330 660 990 1,320
Feet

 79°9'39.657"W 39°28'18.074"N



Compartment 11 Stand 16 FY-20




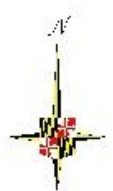
| | |
|------------------------|------------------|
| Stand Acres..... | 20 |
| Harvestable Acres..... | 15 |
| Forest Type..... | Mixed Oak |
| Basal Area..... | 72 |
| BA AGS..... | 16 |
| Stocking..... | 49% |
| Site Index..... | 60 for White Oak |
| Composition..... | Red Maple 53% |
| | Sugar Maple 44% |
| | Black Cherry 13% |

HCVF Components

-  Wildlands
-  Ecologically Significant Area
-  Old Growth w/ 300' Buffer
-  Old Growth Management Unit
-  Wetland of State Concern w/ 100' Buffer
-  Streams w/ 50' Buffer

0 165 330 660 990 1,320 Feet

 79°9'39.657"W 39°28'18.074"N



Description/Resource Impact Assessment

Location: This area is located on the Backbone Mountain Complex in Compartment 12, Stand 4 of the Potomac State Forest. The stand lies along the Backbone Mountain Handicapped Hunter Access Road, at the “T” intersection, 0.5 miles from the gated entrance along Route 135.

Forest Community Type and Condition: This 20-acre site contains a mature, 100 year old Alleghany Hardwoods stand with an average merchantable diameter of 13.6”. The over story is made up primarily of Red Maple (31%), Sugar Maple (22%), Black Cherry (12%) and Northern Red Oak (12%). There is also a limited amount of dead and dying Ash at (3%) of the BA. This stand is well under stocked at only 42% relative density, and contains 61 sq.ft.of BA, of this, 46 sq.ft.BA is considered acceptable growing stock. This understocked stand only contains approximately 1,600-1,800 bd. Ft. /acre.

Advanced regeneration is very minimal; no sample plots show as being “stocked”. The heavily developed understory of Witch-hazel (which occupies nearly 92% of the stand) has restricted any further seedling development without some outside influence. There is no other significant plant interference impeding regeneration efforts, and no non-native invasive species (NNIS) were observed in the stand inventory.

This forest stands most significant feature is the approximately 2-acre palustine scrub-shrub/forested wetland that divides the stand from north to south in the eastern 1/3 of the tract. This narrow 60-100 ft. strip contains various wetland shrubs including: Black Willow, Red Osier Dogwood, Winterberry Holly, and Hazelnut as well as various grasses sedges and ferns associated with this community type. The surrounding hardwoods are growing right up to the hydrologic limits of the wetland, and this over story shade appears to be limiting the shrub community’s full development. The wetland drains to an unnamed tributary of Folly Run within the Potomac River Watershed.

Historic Conditions: The southern half of this stand had been under contract for a pulpwood / TSI thinning in 1989 from this valuable young mixed oak forest. At that time, Gypsy Moth populations had begun to build and the stand was subjected to several years of partial defoliations. The area was sprayed for Gypsy Moth control in 1989, 91 and 94. The northern half of this stand had been thinned in 1999 and yielded 8,000 bd. Ft./acre, 78% being mixed oaks. In October of 2002, Garrett County was hit with a major ice storm. Damage to the forest was wide spread, with the worst damage occurring between 2,300 and 3,000 feet in elevation where this stand falls. The prior thinnings in this stand left it particularly vulnerable to this ice damage.

Following the stresses of the 2002 ice storm, droughty conditions occurred during the next two summers (2003 & 2004) further stressing these high elevation forests. In 2005, 06 and 07 Gypsy Moths literally blew in and blew-up, warranting additional spray treatments within the Complex, though not in this stand as the Oak component was all but gone by this time.

Rare, Threatened and Endangered Species: The Forest Manager knows of no rare, threatened or endangered species on the site or impacted by the silvicultural prescription.

Habitats and Species of Management Concern: There are no known habitats or species of management concern on this site.

Water Resources: A prominent feature in this stand is the approximately 2-acre palustine scrub-shrub/forested wetland that divides the stand from north to south in the eastern 1/3 of the tract. The wetland drains to an unnamed tributary of Folly Run within the Potomac River Watershed.

Recreation Resources: Hunting is the primary recreational activity in this stand, as it fronts the Backbone Mountain Handicapped Hunter Access Road. There are no other developed recreational resources within or immediately adjacent to the management area

Soil Resources: Underlying soils include: 'Dekalb and Gilpin very stony loams' and 'Cookport and Ernest very stony silt loams'. These soils are generally moderately deep and well drained *with inclusions of some poorly drained soils, with moderate equipment limits because the water table is close to the soil surface in winter and in early spring.* Degree of slope ranges from 0-25% throughout the site. The site has good to very good productivity for woodland management, with site index for upland oaks ranging from 65-85 across the stand.

Management and Silvicultural Recommendations

The planned silvicultural treatment for this site is to move toward restoring site productivity by regenerating the stand using a series of patch clearcuts. This practice will provide for the harvest of only 1,600-1,800 Bd. Ft. per acre, making this tract nearly unmerchantable (not having sufficient volume to support commercial harvest.) Our goal to include this acreage in a single collective harvest across the surrounding stands, allowing the more merchantable work to help carry the restoration harvest of this degraded stand. As the overall condition and regeneration potential of this stand is particularly challenged, area wide 'variable retention' goals will not be accounted for, within the patch cuts in this stand. Every live tree cut in this stand is important for its potential contribution of high quality stump sprout regeneration in attempting to restore this very poor conditioned stand. Retention goals will be accounted for in adjacent stands.

The dense understory of Witch-hazel will be removed through one of several options; the first being by the commercial logging contractor harvesting the timber either cuts it at ground level, or preferably grubs it out of the ground to lessen sprouting. There may be some opportunity for non-commercial TSI type work using post harvest, herbicide spot treatment applications.

Deer impacts will also be addressed in the contract. The harvest will be managed to retain high tops and lops from cut trees to offer some deer browse protection to developing seedlings and critical stump sprouts.

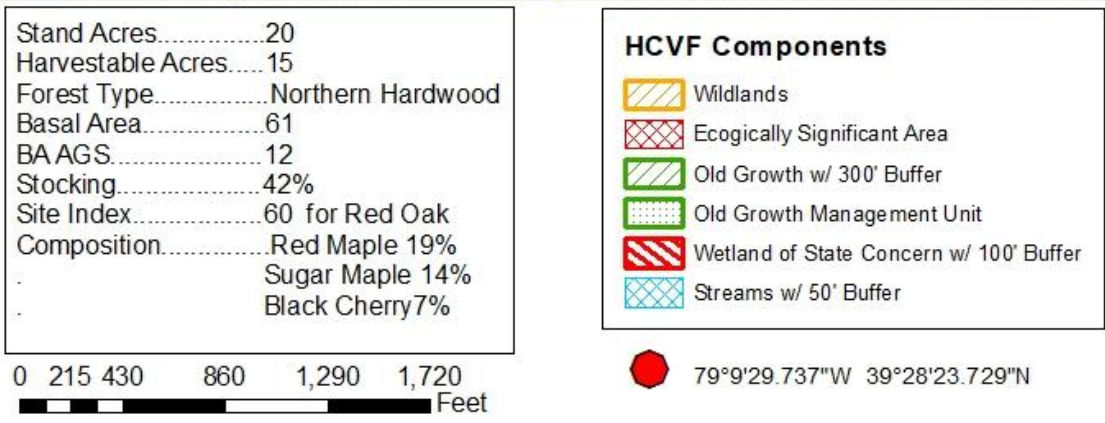
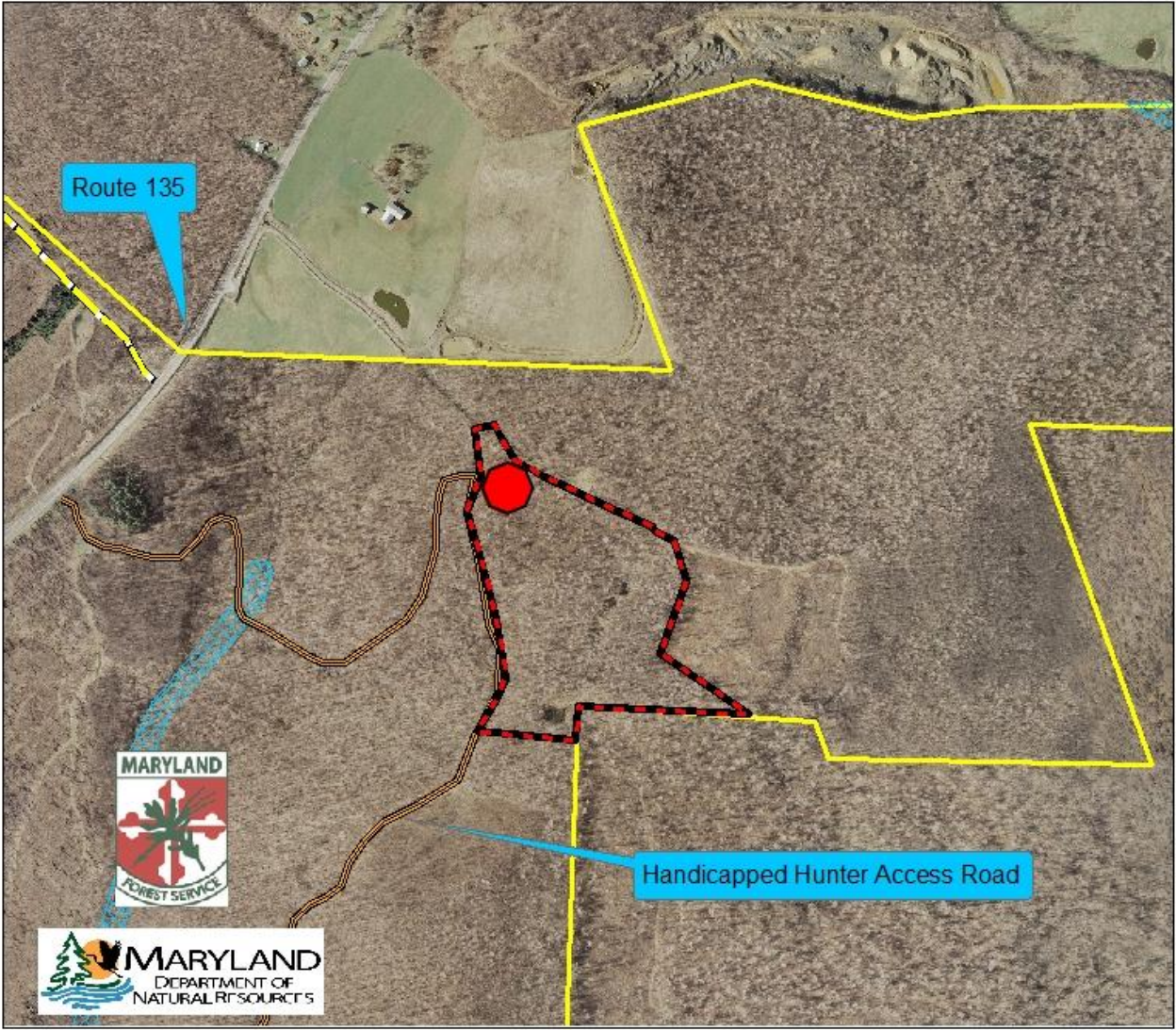
In addition to the silvicultural work, wildlife habitat improvements are also proposed: The planned habitat management for this stand will focus on expanding the wetland scrub-shrub habitat community within the stand. With the surrounding forest encroaching and crowding out

the scrub-shrub community, the plan is to provide a transitioning, soft edge between the maturing hardwood forest and the small high elevation wetland. A 100 ft. strip will be clearcut, with all trees 2" and greater to be cut; allowing the scrub-shrub plant community to expand to its hydrologic limits within this opening. In order to increase wildlife cover values, only the few merchantable saw logs will be removed from the site; all other material will be left to lie high upon the ground offering very dense, protective nesting and brooding cover to small birds and mammals, while also restricting deer browse on the regenerating stump sprouts and shrub seedlings. To further assure shrub community expansion, seedlings and cuttings may be planted among the available open areas along the forest/wetland edge.

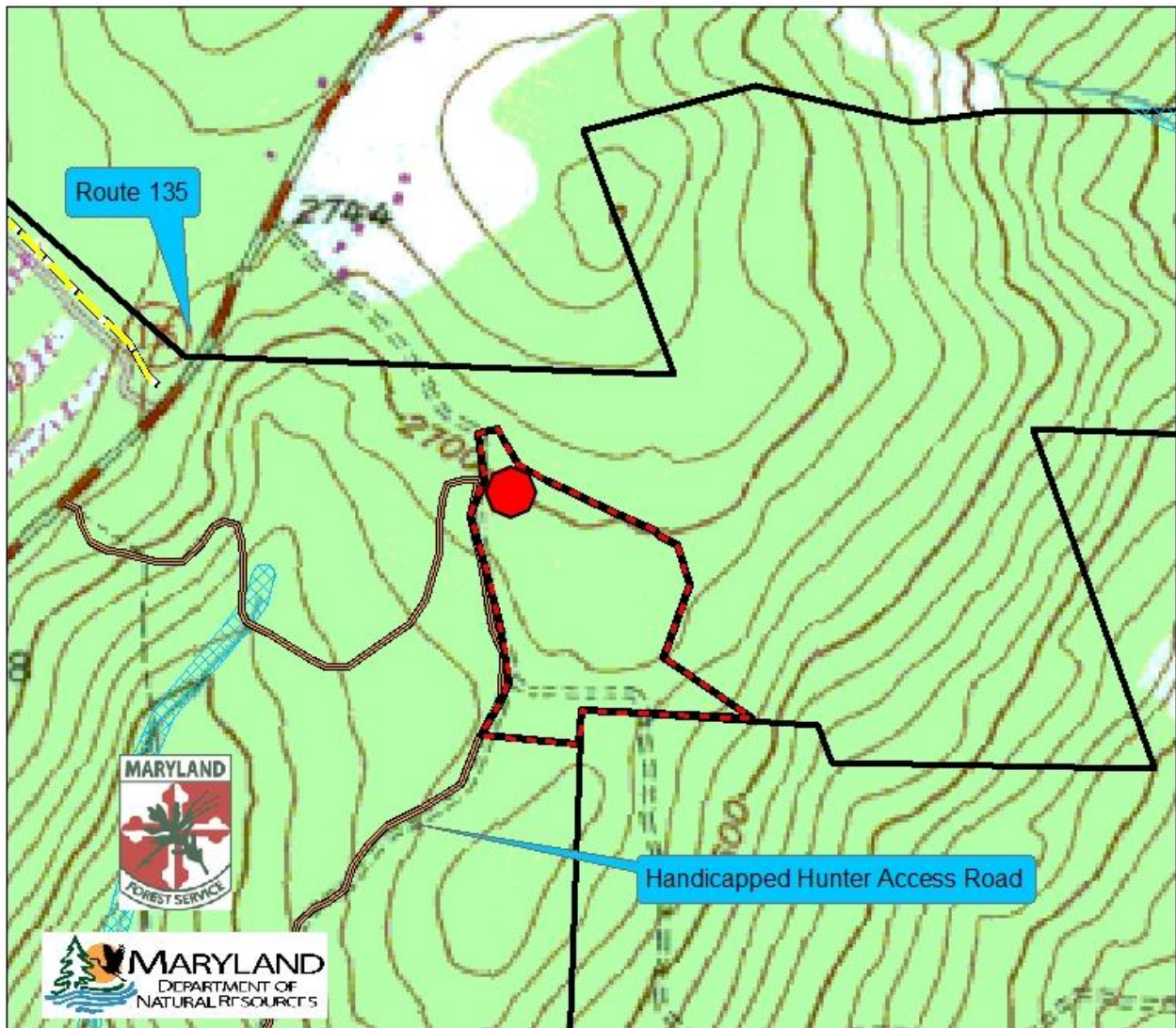
This practice will not only provide the wetland shrub community a chance to expand to its limits, it will also provide an extension of the early succession habitat conditions found within the wetland by providing a transition from the wetland /shrub community to new, young forest cover, and then into older forest in the adjacent stands.

The combined silvicultural work and wetland / wildlife habitat work will complement one another in providing outstanding early succession habitat conditions suited to a number of both game and non-game species while restoring this degraded forest to its sustainable, productive site potential once again.

Compartment 12 Stand 4 FY-2020



Compartment 12 Stand 4 FY-2020



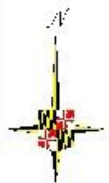
| | |
|------------------------|-------------------|
| Stand Acres..... | 20 |
| Harvestable Acres..... | 15 |
| Forest Type..... | Northern Hardwood |
| Basal Area..... | 61 |
| BA AGS..... | 12 |
| Stocking..... | 42% |
| Site Index..... | 60 for Red Oak |
| Composition..... | Red Maple 19% |
| | Sugar Maple 14% |
| | Black Cherry 7% |

0 215 430 860 1,290 1,720 Feet

HCVF Components

- Wildlands
- Ecologically Significant Area
- Old Growth w/ 300' Buffer
- Old Growth Management Unit
- Wetland of State Concern w/ 100' Buffer
- Streams w/ 50' Buffer

79°9'29.737"W 39°28'23.729"N



Description/Resource Impact Assessment

Location: This area is located on the Backbone Mountain Complex in Compartment 12, Stand 7 of the Potomac State Forest. The stand lies to the east and north of the Backbone Mountain Handicapped Hunter Access Road, and fronts the south side of the neighboring farms pasture field.

Forest Community Type and Condition: This 53-acre site contains a mature, 100 year old Alleghany Hardwoods stand with an average merchantable diameter of 13.0". The over story is made up primarily of Black Cherry (40%), Red Maple (38%), and Northern Red Oak (14%). This stand is well under stocked at only 53% relative density, and contains 92 sq.ft.of BA, of this, 23 sq.ft.BA is considered acceptable growing stock.

Advanced regeneration is minimal with only 20% of the stand being stocked with saplings; these being mainly storm damaged Red Maple and Cherry. Tall woody interference is impeding seedling development, as a heavily developed understory of Witch-hazel (which occupies nearly 77% the stand) has restricted any further seedling development without some outside influence. Ferns and grasses occupy 20% of the understory, further restricting seedling development on that portion of the stand. No non-native invasive species were observed during stand examination

Historic Conditions: The eastern half of the stand had been thinned in 1980 and yielded 4,600 bd. ft/acre (87% mixed oaks) from this valuable young mixed oak forest. At that time, Gypsy Moth populations had begun to build and the stand was subjected to several years of partial defoliations. The area was sprayed for Gypsy Moth control in 1989, 91 and 94. The western half of this stand had been thinned in 1997 and yielded 5,700 bd.ft./acre (48% mixed oaks) from this transitioning stand. In October of 2002, Garrett County was hit with a major ice storm. Damage to the forest was wide spread, with the worst damage occurring between 2,300 and 3,000 feet in elevation where this stand falls. The prior thinnings in this stand left it particularly vulnerable to this ice damage.

Following the stresses of the 2002 ice storm, droughty conditions occurred during the next two summers (2003 & 2004) further stressing these high elevation forests. In 2005, 06 and 07 Gypsy Moths literally blew in and blew-up, warranting additional spray treatments within the Complex, though not in this stand as the Oak component was all but gone by this time.

Rare, Threatened and Endangered Species: The Forest Manager knows of no rare, threatened or endangered species on the site or impacted by the silvicultural prescription.

Habitats and Species of Management Concern: There are no known habitats or species of management concern on this site.

Water Resources: This site drains toward an unnamed tributary of Laurel Run within the Potomac River Watershed. All wetlands and streams will be buffered according to the guidelines within the PGSF Sustainable Forest Management Plan.

Recreation Resources: Hunting is the primary recreational activity in this stand, as it fronts the Backbone Mountain Handicapped Hunter Access Road. There are no other developed recreational resources within or immediately adjacent to the management area

Soil Resources: Underlying soils include: 'DeKalb and Gilpin very stony loams'. These soils are generally moderately deep and well drained over bedrock. Degree of slope ranges from 0-25% throughout the site. The site has good to very good productivity for woodland management, with site index for upland oaks ranging from 65-85 across the stand.

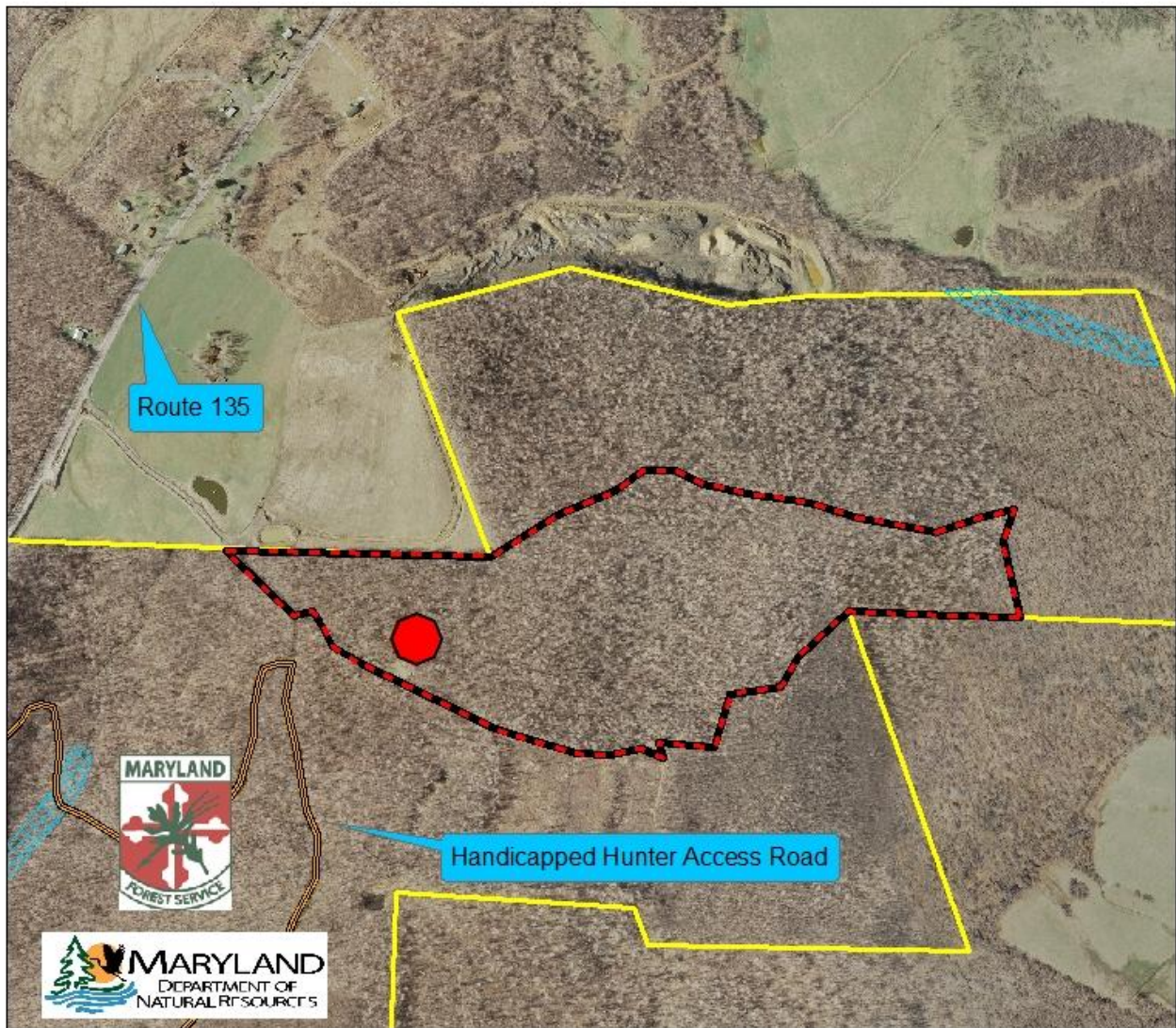
Management and Silvicultural Recommendations

The planned silvicultural treatment for this site is to move toward restoring site productivity of this high quality growing site by regenerating the stand using a series of patch clearcuts in which all trees 2"DBH or greater will be cut. Every live tree cut in this stand is important for its potential contribution of high quality stump sprout regeneration in attempting to restore the productivity of this high quality growing site. As the overall condition and regeneration potential of this stand is particularly challenged, area wide 'variable retention' goals will not be accounted for within the patch cuts in this stand with the exception of retaining buffers around any springs or streams, and retaining where available, 2-3 cull trees/acre that may offer wildlife habitat elements including mast production, or cavity or den trees, snags and potential drumming logs. This practice will provide for the harvest of approx. 2,500 Bd. Ft. per acre. This commercially viable harvest will allow for the utilization of the remaining poor quality growing stock, while maximizing the stump sprout regeneration potential on this site helping to move this stand toward restoration of its full growth potential on this otherwise high quality growing site.

The dense understory of Witch-hazel will be removed through one of several options; the first being that the commercial logging contractor harvesting the timber will either cut it at ground level, or preferably grub it out of the ground to lessen sprouting. There may be some opportunity for non-commercial TSI type work using post harvest, herbicide spot treatment applications.

Deer impacts will also be addressed in the contract. The harvest will be managed to retain high tops and lops from cut trees to offer some deer browse protection to any developing seedlings and critical stump sprouts.

Compartment 12 Stand 7 FY-20



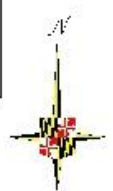
| | |
|------------------------|--------------------|
| Stand Acres..... | 53 |
| Harvestable Acres..... | 53 |
| Forest Type..... | Allegheny Hardwood |
| Basal Area..... | 92 |
| BA AGS..... | 23 |
| Stocking..... | 53% |
| Site Index..... | 60 for Red Oak |
| Composition..... | Black Cherry 40% |
| | Red Maple 38% |
| | Red Oak 14% |

0 215 430 860 1,290 1,720 Feet

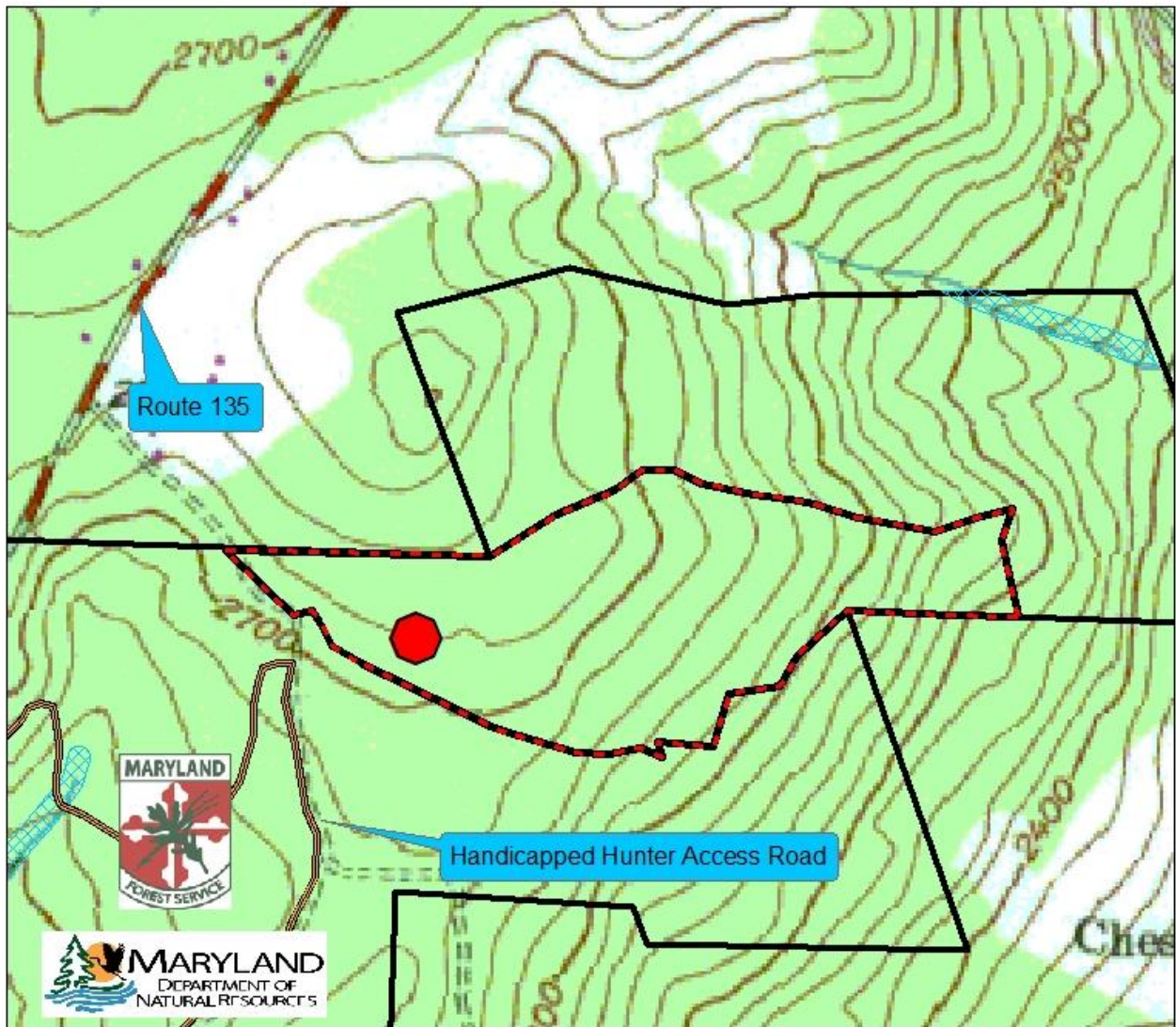
HCVF Components

- Wildlands
- Ecologically Significant Area
- Old Growth w/ 300' Buffer
- Old Growth Management Unit
- Wetland of State Concern w/ 100' Buffer
- Streams w/ 50' Buffer

79°9'24.744"W 39°28'25.925"N



Compartment 12 Stand 7 FY-20



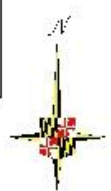
| | |
|------------------------|--------------------|
| Stand Acres..... | 53 |
| Harvestable Acres..... | 53 |
| Forest Type..... | Allegheny Hardwood |
| Basal Area..... | 92 |
| BA AGS..... | 23 |
| Stocking..... | 53% |
| Site Index..... | 60 for Red Oak |
| Composition..... | Black Cherry 40% |
| | Red Maple 38% |
| | Red Oak 14% |

0 215 430 860 1,290 1,720 Feet

HCVF Components

- Wildlands
- Ecologically Significant Area
- Old Growth w/ 300' Buffer
- Old Growth Management Unit
- Wetland of State Concern w/ 100' Buffer
- Streams w/ 50' Buffer

79°9'24.744"W 39°28'25.925"N



Description/Resource Impact Assessment

Location: This area is located on the Backbone Mountain Complex in Compartment 12, Stand 8 of the Potomac State Forest. The stand lies in the northeast corner of the tract and fronts on private land on portions of all 4 sides.

Forest Community Type and Condition: This 85-acre site contains a mature, 100 year old Alleghany Hardwoods stand with an average merchantable diameter of 14.0". The over story is made up primarily of Red Maple (44%), Northern Red Oak (16%), Black Cherry (16%). This stand appears to be adequately stocked at 68% relative density, and contains 106 sq.ft.of BA, of this, 68 sq.ft.BA is considered acceptable growing stock.

Advanced regeneration is minimal with only 15% of the stand being stocked desirable regeneration. Tall woody interference is impeding seedling development, as a heavily developed understory of Witch-hazel and Black Birch (which occupies nearly 48% the stand) has restricted any further seedling development without some outside influence. Ferns and grasses and other low woody interference occupy 25% of the understory, further restricting seedling development. A few multiflora rose bushes were observed in the stand. It is present particularly along the edges of the state land that border the private land fields.

Historic Conditions: Like Stand 12-7, the eastern half of the stand had been thinned in 1980 and yielded 4,600 bd. ft/acre (87% mixed oaks) from this valuable young mixed oak forest. At that time, Gypsy Moth populations had begun to build and the stand was subjected to several years of partial defoliations. The area was sprayed for Gypsy Moth control in 1989, 91 and 94. The western half of this stand had been thinned in 1997 and yielded 5,700 bd.ft./acre (48% mixed oaks) from this transitioning stand. In October of 2002, Garrett County was hit with a major ice storm. Damage to the forest was wide spread, with the worst damage occurring between 2,300 and 3,000 feet in elevation where this stand falls. The prior thinnings in this stand left it particularly vulnerable to this ice damage.

This stand had been proposed for a salvage/regeneration harvest as part of the 2004 Annual Work Plan, when a boundary conflict was discovered. The harvest was postponed while funds were sought to resolve the boundary issue through survey work. No funding was provided to address this survey issue, and much of this ice damaged timber was lost. The 2004 harvest plans called for the harvest of over 10,000 Bd. Ft/ acre a little too late, as the 2020 AWP will provide for the salvage/restoration harvest of approximately 3,500 Bd.Ft/acre in this severely degraded stand.

Rare, Threatened and Endangered Species: The Forest Manager knows of no rare, threatened or endangered species on the site or impacted by the silvicultural prescription.

Habitats and Species of Management Concern: There are no known habitats or species of management concern on this site.

Water Resources: This site drains toward an unnamed tributary of Laurel Run within the Potomac River Watershed. All wetlands and streams will be buffered according to the guidelines within the PGSF Sustainable Forest Management Plan

Recreation Resources: Hunting is the primary recreational activity in this stand, as it is accessed through the Backbone Mountain Handicapped Hunter Access Road. There are no other developed recreational resources within or immediately adjacent to the management area

Soil Resources: Underlying soils include: 'Dekalb and Gilpin very stony loams'. These soils are generally moderately deep and well drained over bedrock. There is a small inclusion of 'Cookport and Ernest very stony silt loams' along the stream in the north-east corner of the stand. Degree of slope ranges from 0-25% throughout the site. The site has good to very good productivity for woodland management, with site index for upland oaks ranging from 65-85 across the stand.

Management and Silvicultural Recommendations

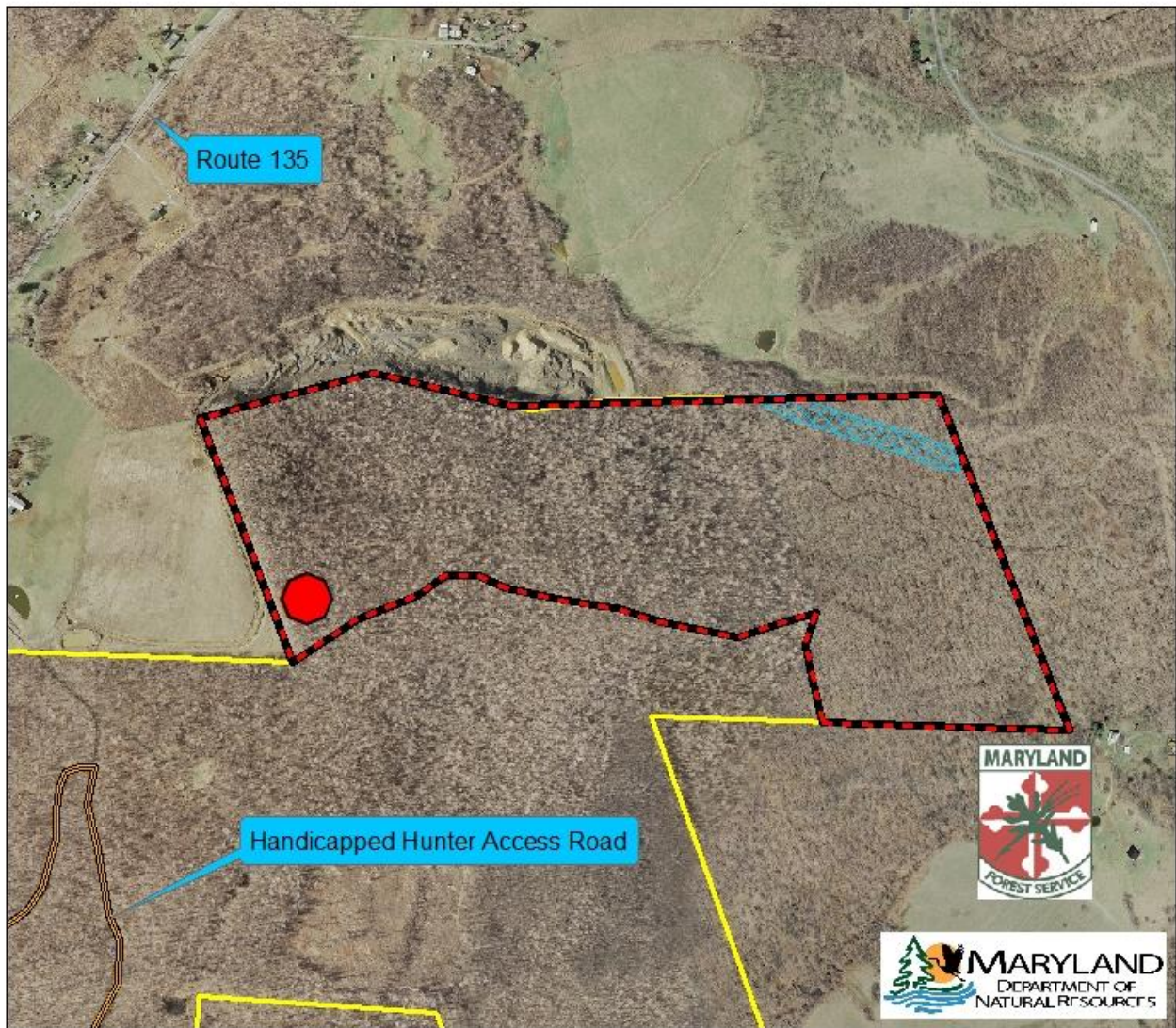
The planned silvicultural treatment for this site is to begin to move toward restoring site productivity of this high quality growing site, regenerating the stand using a series of patch clearcuts in which all trees 2"DBH or greater will be cut. Every live tree cut in this stand is important for its potential contribution of high quality stump sprout regeneration. As this stand is nearly adequately stocked, 5% area wide 'variable retention' goals will be accounted for within the patch- cuts in this stand. Variable retention will be carried out across any clearcuts exceeding 7 acres resulting in 4-6 trees per acre being retained. In smaller cuts retain where available 2-3 cull trees/acre that may offer wildlife habitat elements including mast production, or cavity or den trees, snags and potential drumming logs. Additional retention will be set aside in known rock bars, and stream buffers resulting in an area wide retention of 5%.

This practice will provide for the harvest of approx. 3,500 Bd. Ft. per acre. This commercially viable harvest will allow for the utilization of the remaining poor quality, mature, growing stock, while maximizing the stump sprout regeneration potential on this site helping to move this stand toward restoration of its full growth potential on this otherwise high quality growing site.

The dense understory of Witch-hazel will be removed through one of several options; the first being that the commercial logging contractor harvesting the timber will either cut it at ground level, or preferably grub it out of the ground to lessen sprouting. There may be some opportunity for non-commercial TSI type work using post harvest, herbicide spot treatment applications.

Deer impacts will also be addressed in the contract. The harvest will be managed to retain high tops and lops from cut trees to offer some deer browse protection to any developing seedlings and critical stump sprouts.

Compartment 12 Stand 8 FY-20



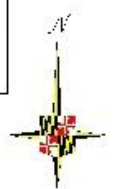
Stand Acres.....85
 Harvestable Acres.....65
 Forest Type.....Allegheny Hardwood
 Basal Area.....106
 BA AGS.....68
 Stocking.....68%
 Site Index.....60 for Red Oak
 Composition.....Red Maple 44%
 Red Oak 16%
 Black Cherry 16%

HCVF Components

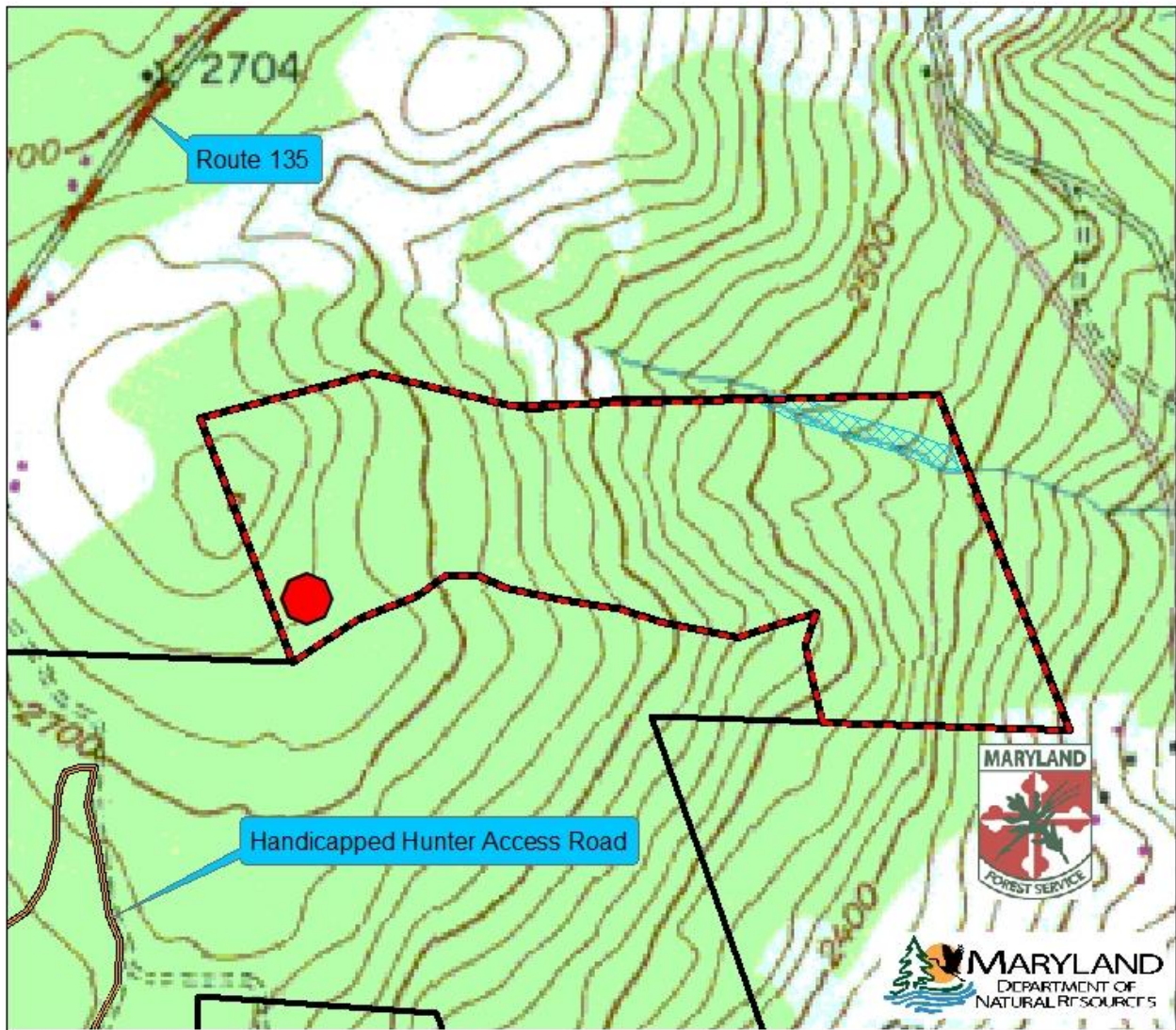
- Wildlands
- Ecologically Significant Area
- Old Growth w/ 300' Buffer
- Old Growth Management Unit
- Wetland of State Concern w/ 100' Buffer
- Streams w/ 50' Buffer

0 215 430 860 1,290 1,720 Feet

79°9'20.38"W 39°28'32.605"N



Compartment 12 Stand 8 FY-20




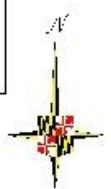
Stand Acres.....85
 Harvestable Acres.....65
 Forest Type.....Allegheny Hardwood
 Basal Area.....106
 BA AGS.....68
 Stocking.....68%
 Site Index.....60 for Red Oak
 Composition.....Red Maple 44%
 Red Oak 16%
 Black Cherry 16%

HCVF Components

-  Wildlands
-  Ecologically Significant Area
-  Old Growth w/ 300' Buffer
-  Old Growth Management Unit
-  Wetland of State Concern w/ 100' Buffer
-  Streams w/ 50' Buffer

0 215 430 860 1,290 1,720
 Feet

 79°9'20.38"W 39°28'32.605"N



Description/Resource Impact Assessment

Location: This site is located on the east side of Herrington Manor Road, and is accessed from the gated forest access road across from Herrington Manor State Park entrance, within Compartment 31 Stand 5 of the Garrett State Forest.

Forest Community Type and Condition: This 35-acre site contains a 98 year old Alleghany Hardwood stand thinned in 1977 and again in 1999. The over story is made up primarily of Red Maple (42%) of the BA, Sugar Maple (19%), Northern Red Oak, (11%), and Black Cherry (9%). The stand is adequately stocked at a relative density of 64% and 95 sq.ft. BA/acre; of which 91 sq. ft. is acceptable growing stock having optimal room to grow. This mature stand contains insufficient regeneration with only 15% of the stand containing desirable sapling regeneration as the understory is dominated by Black Birch. The stand is growing 6,240 bd.ft./ac.

Interfering Elements: Interfering plant competition at all levels poses a significant impediment to future regeneration. Problematic levels of ferns and grasses occur on 28% of the site. Low woody interference occurs on 48% of the site (primarily Black Birch and Dewberry). Tall woody interference in the form of Black Birch occupies 45% of the stands understory reaching into lower canopy layers. Deer browse pressure in this area is considered to be very high and must be addressed when considering regeneration efforts on this site. Non-native invasive species, (NNIS) observed during the inventory included Multiflora Rose and Japanese Barberry with only one observation of each. There were no significant insect pests or diseases seen in the stand.

Historic Conditions: As previously noted, the stand was thinned in both 1977 (as a pulpwood thinning/TSI, and later followed up with an heavy intermediate harvest in 1999. This stand was sprayed for Gypsy Moths in 1989 and 1990, indicating a significant investment in this resource. There was no evidence of recent fire activity observed .

Rare, Threatened and Endangered Species: The Forest Manager knows of no rare, threatened or endangered species on the site, or that would be impacted by the proposed silvicultural prescription.

Habitats and Species of Management Concern: There is High Conservation Value Forest located beneath the lower slope of the stand, along the banks of Herrington Creek. This HCVF contains the Herrington Springs ESA. The HCVF is so designated as it provides conservation protection to various threatened and endangered plants, a globally rare amphipod, and also offers protection as a Deer wintering area, and contains an important “wildlife opening”. The Forest Manager knows of no habitats or species of management concern on the site that would be impacted by the silvicultural prescription.

Water Resources: This mid-slope stand drains into Herrington Creek, part of the Youghiogheny River Watershed. Planned work will take place outside of all HCVF stream buffer areas. All streams and wetlands will be protected per the requirements set forth in the Potomac-Garrett State Forest Sustainable Forest Management Plan.

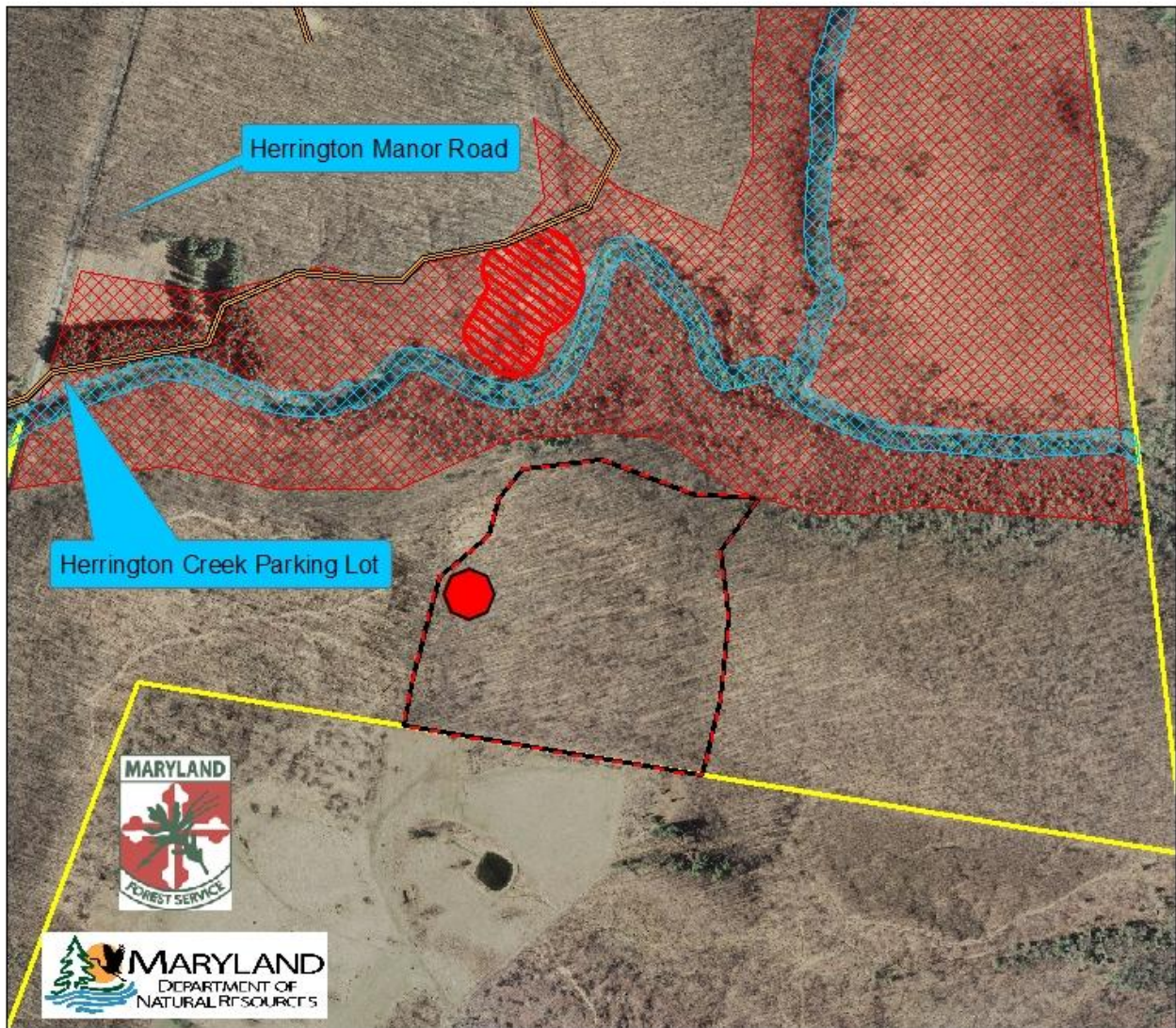
Recreation Resources: Hunting is the primary form of recreation that takes place in this stand. There are no developed recreational assets on this site.

Soil Resources: The underlying soils are mapped as “Dekalb and Gilpin very stony loams” along the upper slopes, and “Stony steep land” along lower slopes. These soils are generally moderately deep and well drained with inclusions of some poorly drained soils. Degree of slope ranges from 0-25% throughout the site. Equipment limits range slight to moderate as slopes approach 25%. Hazard of erosion is slight to moderate on the steeper slopes. The site has good-very good productivity for woodland management, with a site index of 65-85 for upland oaks

Management and Silvicultural Recommendations

Stand stocking is suitable for seedling establishment, however, interfering vegetation in the understory is preventing this. As such, the planned silvicultural treatment for this site is to carry out a 'weeding' practice to create understory conditions suitable for the establishment of desirable seedling growth. Interfering vegetation will be controlled using appropriate herbicide applications. The problematic ground cover of ferns, grasses, and the lower growing (<15 ft tall) Black Birch will be treated using low volume/low concentration foliar applications with both high and low nozzles to treat both ground level and up to 15 ft. undesired plants. The larger sapling sized tall woody interference is comprised mainly of the Black Birch, will be treated with a stem directed herbicide treatment (cut surface or basal bark application). This treatment will open the forest floor to increased sunlight necessary for desired seedling establishment. Following these treatments, the stand will be monitored for regeneration over the next 5-10 years. As seedlings become established, additional cultural work will be prescribed as necessary to bring this new seedling crop along.

Compartment 31 Stand 5 FY-20



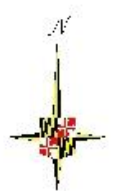
| | |
|----------------------|-------------------|
| Stand Acres..... | 35 |
| Treatable Acres..... | 35 |
| Forest Type..... | Northern Hardwood |
| Basal Area..... | 95 |
| BA AGS..... | 91 |
| Stocking..... | 64% |
| Site Index..... | 65 for Red Oak |
| Composition..... | Red Maple 42% |
| | Sugar Maple 19% |
| | Red Oak 11% |

HCVF Components

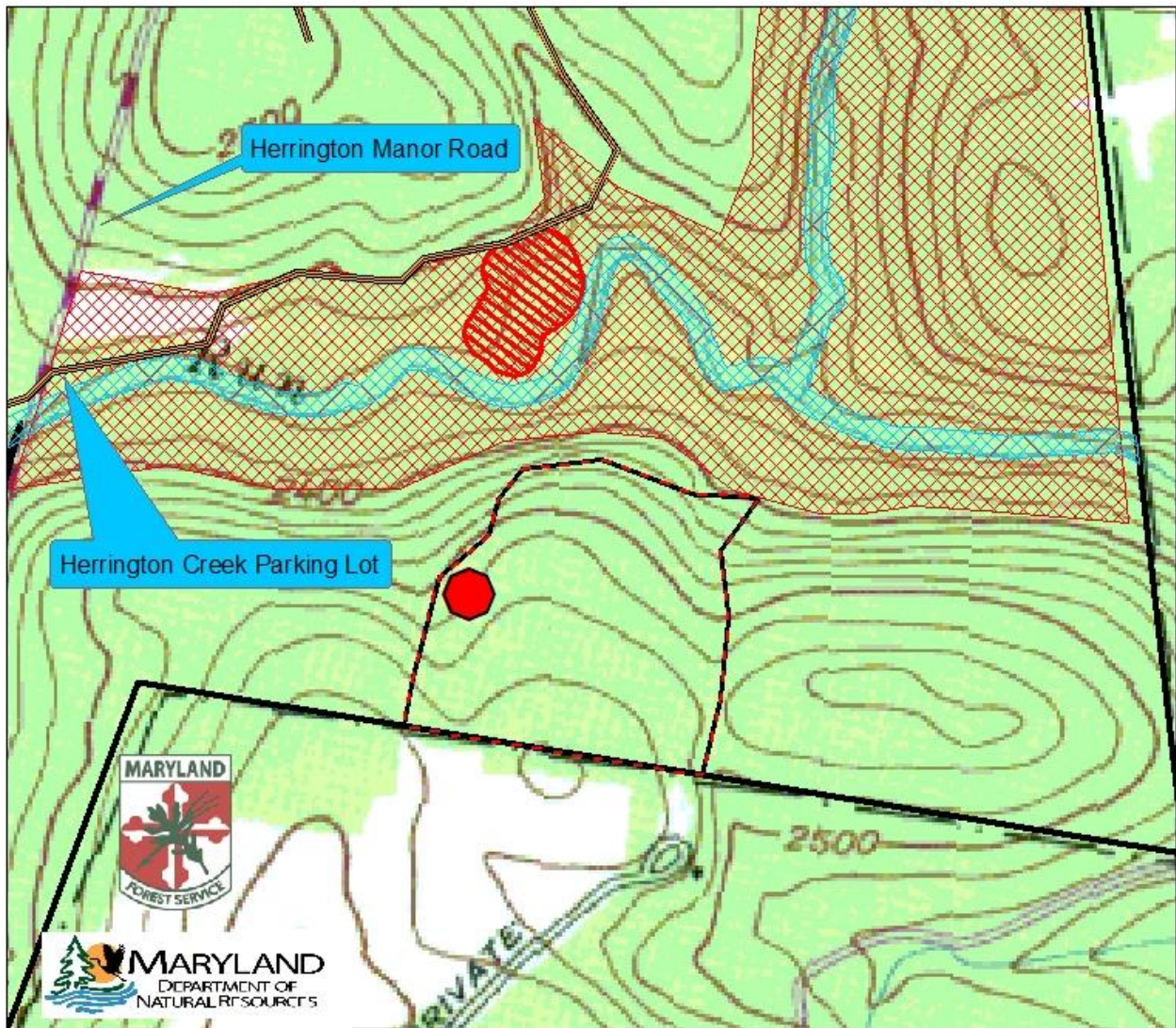
| | |
|--|---|
| | Wildlands |
| | Ecologically Significant Area |
| | Old Growth w/ 300' Buffer |
| | Old Growth Management Unit |
| | Wetland of State Concern w/ 100' Buffer |
| | Streams w/ 50' Buffer |

0 215 430 860 1,290 1,720 Feet

79°26'13.276"W 39°27'42.193"N



Compartment 31 Stand 5 FY-20



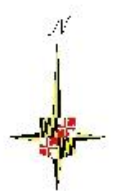
| | |
|----------------------|-------------------|
| Stand Acres..... | 35 |
| Treatable Acres..... | 35 |
| Forest Type..... | Northern Hardwood |
| Basal Area..... | 95 |
| BA AGS..... | 91 |
| Stocking..... | 64% |
| Site Index..... | 65 for Red Oak |
| Composition..... | Red Maple 42% |
| | Sugar Maple 19% |
| | Red Oak 11% |

HCVF Components

| | |
|--|---|
| | Wildlands |
| | Ecologically Significant Area |
| | Old Growth w/ 300' Buffer |
| | Old Growth Management Unit |
| | Wetland of State Concern w/ 100' Buffer |
| | Streams w/ 50' Buffer |

0 215 430 860 1,290 1,720 Feet

79°26'13.276"W 39°27'42.193"N



Description/Resource Impact Assessment

Location: This site is located on the east side of Herrington Manor Road, and is accessed from the gated forest access road across from Herrington Manor State Park entrance, within Compartment 31 Stand 6 of the Garrett State Forest.

Forest Community Type and Condition: This 60-acre site contains a 98 year old Alleghany Hardwood stand thinned in 1977 and again in 1997. The over story is made up primarily of Red Maple (30%) of the BA, Sugar Maple (30%), Northern Red Oak, (15%), and Black Cherry (15%). The stand is nearly fully stocked at a relative density of 90% and 127 sq.ft. BA/acre; of which 115 sq. ft. is acceptable growing stock. This mature stand contains virtually no desirable regeneration, and the understory is dominated by Black Birch. This valuable stand is growing 8,250 bd.ft./ac.

Interfering Elements: Interfering plant competition serves as a significant impediment to future regeneration. Problematic levels of ferns and grasses occur on 49% of the site. Low woody interference is minimal, as most of the undesirable woody stems have reached into the higher level of “tall woody interference”; tall woody interference in the form of Black Birch occupies 70% of the stands understory reaching into lower canopy layers. Deer browse pressure in this area is considered to be very high and must be addressed when considering regeneration efforts on this site. Non-native invasive species, (NNIS) observed during the inventory included Multiflora Rose and Japanese Barberry with only one observation of each. There were no significant insect pest or diseases seen in the stand.

Historic Conditions: As previously noted, the stand was thinned in both 1977 (as a pulpwood thinning/TSI, and later followed up with an heavy intermediate harvest in 1997. This stand was sprayed for Gypsy Moths in 1989 and 1990, indicating a significant investment in this resource. There was no evidence of recent fire activity observed .

Rare, Threatened and Endangered Species: The Forest Manager knows of no rare, threatened or endangered species on the site, or that would be impacted by the proposed silvicultural prescription.

Habitats and Species of Management Concern: There is High Conservation Value Forest located beneath the lower slope of the stand, along the banks of Herrington Creek. This HCVF contains the Herrington Springs ESA. The HCVF is so designated as it provides conservation protection to various threatened and endangered plants, a globally rare amphipod, and also offers protection as a Deer wintering area, and contains an important “wildlife opening”. The Forest Manager knows of no habitats or species of management concern on the site that would be impacted by the silvicultural prescription.

Water Resources: This mid-slope stand drains into Herrington Creek, part of the Youghiogheny River Watershed. Planned work will take place outside of all HCVF stream buffer areas. All streams and wetlands will be protected per the requirements set forth in the Potomac-Garrett State Forest Sustainable Forest Management Plan.

Recreation Resources: Hunting is the primary form of recreation that takes place in this stand. There are no developed recreational assets on this site.

Soil Resources: The underlying soils are mapped as “Dekalb and Gilpin very stony loams” along the upper slopes, and “Stony steep land” along lower slopes. These soils are generally moderately deep and well drained with inclusions of some poorly drained soils. Degree of slope ranges from 0-25% throughout the site. Equipment limits range slight to moderate as slopes approach 25%. Hazard of erosion is slight to moderate on the steeper slopes. The site has good-very good productivity for woodland management, with a site index of 65-85 for upland oaks

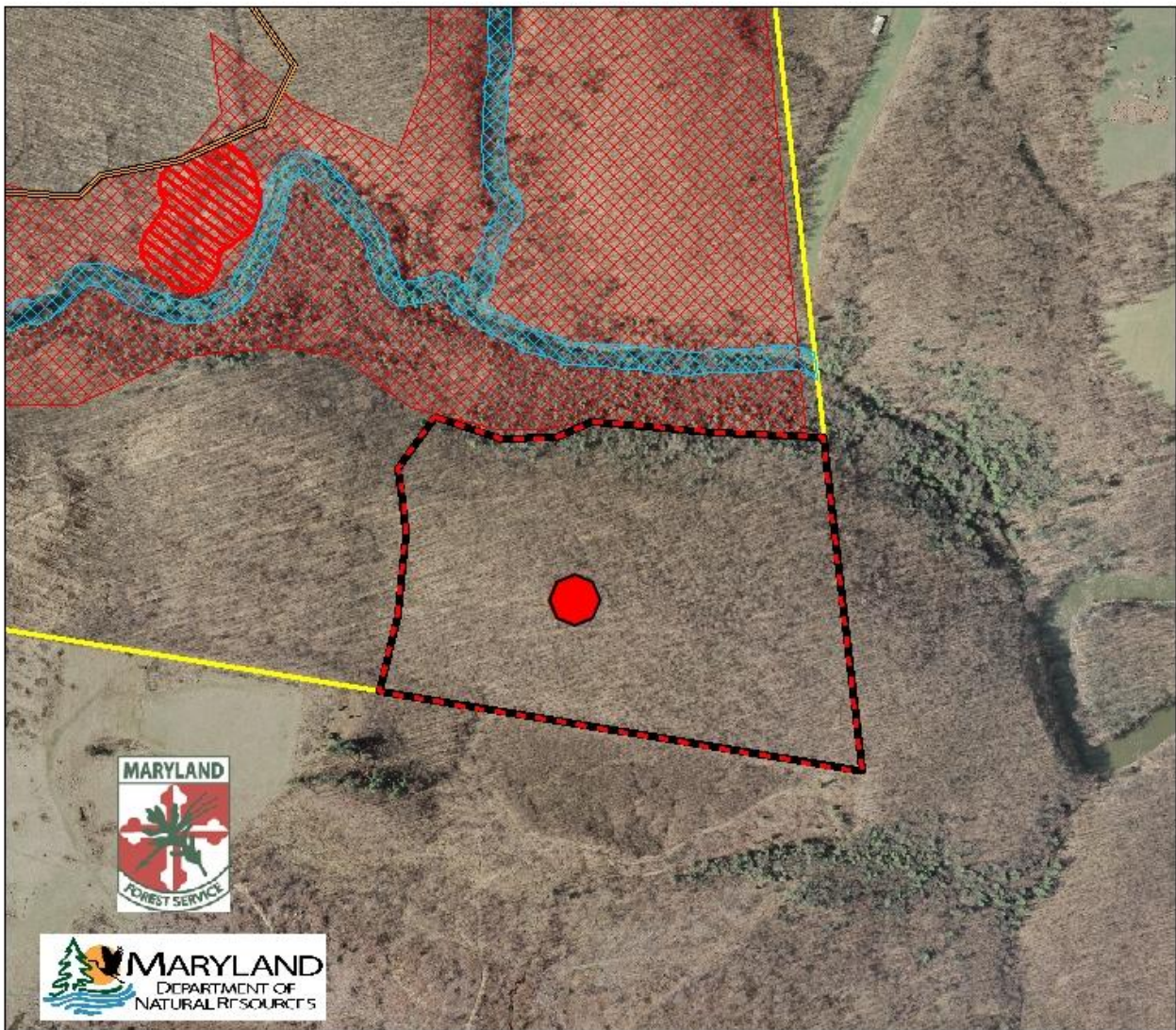
Management and Silvicultural Recommendations

Management goals for this stand are to begin the regeneration process. The objectives will be to create stand conditions suitable for seedling establishment, by removing the interfering vegetation. To that end, the stand will receive a combination, “weeding” and “non-commercial thinning” practice where interfering vegetation will be controlled using appropriate herbicide applications.

The weeding practice will address the problematic ground cover of ferns, grasses, and the lower growing (<15 ft tall) Black Birch; whereby they will be treated using low volume/low concentration foliar applications. The “non-commercial thinning” will reduce stand stocking from 90% to 65% by removing larger, unmerchantable, sapling and pole sized, tall woody interference comprised mainly of the Black Birch in the 4-8” diameter class. These trees will be treated with a stem directed herbicide treatment (cut surface or basal bark application).

These treatments will open the forest floor to increased sunlight necessary for desired seedling establishment. Following these treatments, the stand will be monitored over the next 5-10 years. As seedlings become established, additional cultural work will be prescribed as necessary to bring this new seedling crop along.

Compartment 31 Stand 6 FY-20



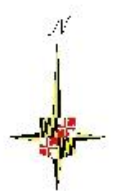
| | |
|----------------------|-------------------|
| Stand Acres..... | 60 |
| Treatable Acres..... | 60 |
| Forest Type..... | Northern Hardwood |
| Basal Area..... | 127 |
| BA AGS..... | 115 |
| Stocking..... | 90% |
| Site Index..... | 65 for Red Oak |
| Composition..... | Sugar Maple 30% |
| | Red Maple 30% |
| | Black Cherry 15% |

HCVF Components

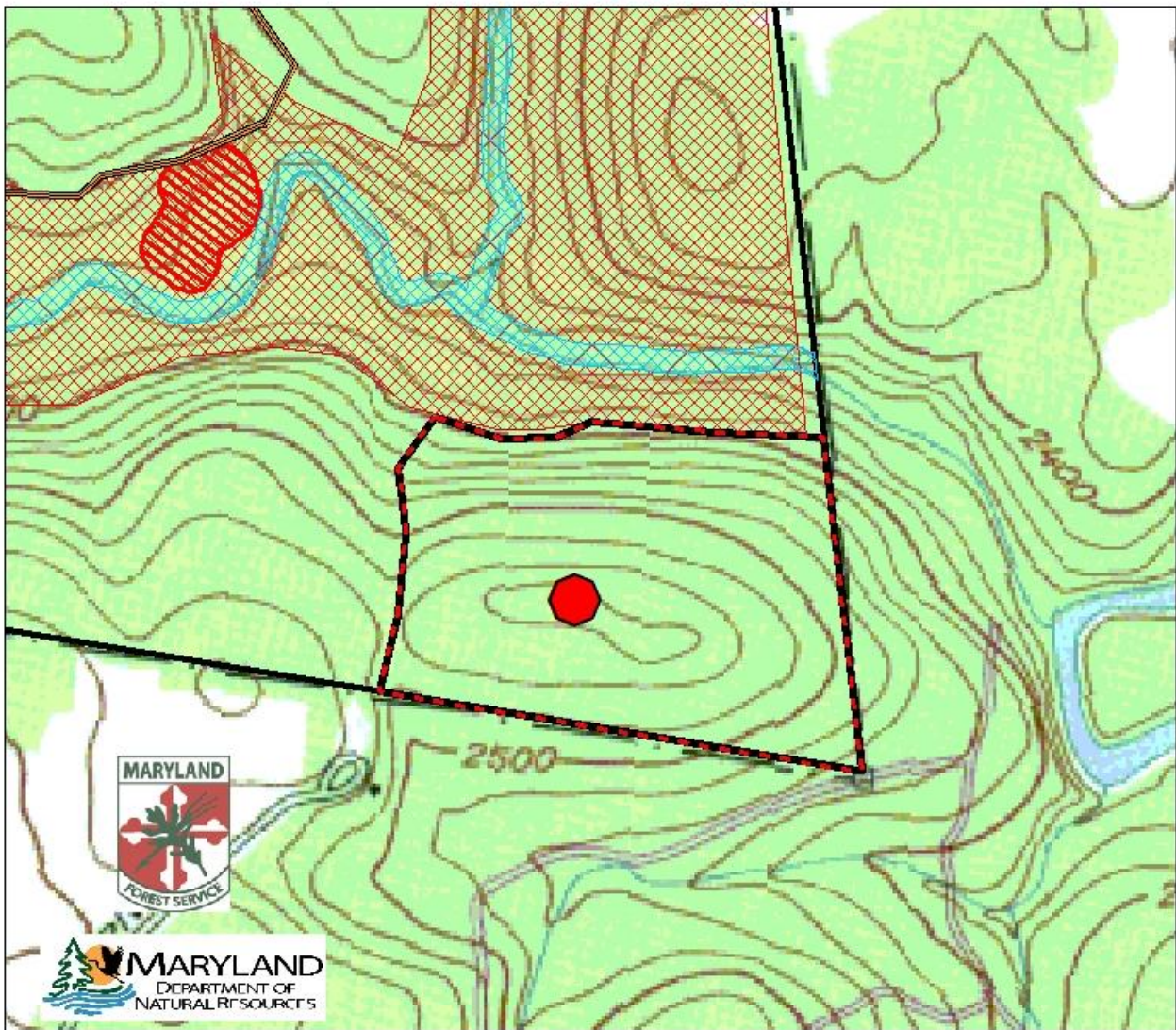
| | |
|--|---|
| | Wildlands |
| | Ecologically Significant Area |
| | Old Growth w/ 300' Buffer |
| | Old Growth Management Unit |
| | Wetland of State Concern w/ 100' Buffer |
| | Streams w/ 50' Buffer |

0 215 430 860 1,290 1,720 Feet

79°25'47.339"W 39°27'38.775"N



Compartment 31 Stand 6 FY-20



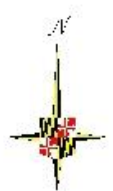
| | |
|----------------------|-------------------|
| Stand Acres..... | 60 |
| Treatable Acres..... | 60 |
| Forest Type..... | Northern Hardwood |
| Basal Area..... | 127 |
| BA AGS..... | 115 |
| Stocking..... | 90% |
| Site Index..... | 65 for Red Oak |
| Composition..... | Sugar Maple 30% |
| | Red Maple 30% |
| | Black Cherry 15% |

HCVF Components

| | |
|--|---|
| | Wildlands |
| | Ecologically Significant Area |
| | Old Growth w/ 300' Buffer |
| | Old Growth Management Unit |
| | Wetland of State Concern w/ 100' Buffer |
| | Streams w/ 50' Buffer |

0 215 430 860 1,290 1,720 Feet

79°25'47.339"W 39°27'38.775"N



Description/Resource Impact Assessment

Location: This area is located on the Snaggy Mountain Complex in Compartment 34, Stand 9 of the Garrett State Forest. The stand is situated on the south side of Swallow Falls Road at the junction of Mellott Road and Swallow Falls Road. This stand was included in the FY-2000 AWP as being slated for regeneration by way of a shelterwood harvest. The work was deferred for 2 additional field seasons in order to carry out additional inventory of RT&E species in the area. The October ice storm of 2002 reprioritized the silvicultural program on the forest, and further management in this stand was postponed.

Forest Community Type and Condition: This 43-acre site contains a nearly mature, 92 year old White Oak stand with an average merchantable diameter of 15". Growth has slowed considerably in this mature stand; dominant/co-dominant trees show an average growth of 23 rings per inch of outer growth. The over story is made up primarily of White Oak (40%), Red Maple (39%) and Black Cherry (6%). This stand is fully stocked at 90% relative density, and contains 122 sq.ft.of BA, 104 sq.ft.BA being considered as AGS. Regeneration is sparse; with only 22% of the stand containing sufficient, competitive or established regeneration, though notably, 15 of this is oak. Interfering plant competition is high, with 70% of the stand supporting some level of problematic interference. Tall woody interference occurs on 17% of the site (much of this being storm damaged Red Maple), problematic levels of fern and grass competition are found on 26%, and 43% of the site has low woody interference, (primarily in the form of Dewberry). No non-native invasive species (NNIS) were observed in the stand inventory.

Historic Conditions: The stand had been under contract for a thinning in 1989 and yielded 4,040 bd. ft /acre from this valuable young oak forest. The harvest was salvage driven as Gypsy Moth populations had been building in the area. The stand was sprayed for Gypsy Moth suppression in 1989, 90 and 91. There is no forest pest or significant disease present, and no evidence of recent fire activity was observed during the recon.

Rare, Threatened and Endangered Species: A species of lilly, "*Clintonia sp.*" is (was?) abundant on the north-east section of this site. The lilly is either *C. umbellatus*, or *C. alleghaniensis*, the latter being a globally rare species (The two species are undistinguishable until fruits reach maturity.) Will seek input from Natural Heritage Biologist, regarding species confirmation as stand management in 2000 had been deferred in order to allow for two full field seasons for inventory and ID of the species in question. In addition, a ground water spring in this parcel was suspected to harbor a globally rare groundwater macro invertebrate population that may warrant additional special protections, beyond the normal stream buffer protections provided under the State Forests Sustainable management plan. The species of concern is known to be found in springs to the east and west of this was management unit. The springs on site were to be sampled in 2000-2002 to determine presence or absence of this species to determine any particular management needs. Through the review process, staff will consult with DNR Natural Heritage Biologist for findings and recommendations.

Habitats and Species of Management Concern: See Rare, Threatened and Endangered Species: section above.

Water Resources: This site is drained by an unnamed tributary that flows into the Youghiogheny River. This tributary is fed by underground, limestone springs, that may harbor globally rare macro invertebrates. The proposed silvicultural treatments will be outside of all required protective riparian buffers of the wetlands and streams.

Recreation Resources: Hunting is the primary recreational activity in this stand. There are no developed recreational resources within or immediately adjacent to the management area

Soil Resources: Underlying soils include: 'Dekalb and Gilpin very stony loams'. These soils are generally moderately deep and well drained with inclusions of some poorly drained soils, with moderate equipment limits because the water table is close to the soil surface in winter and in early spring. Degree of slope ranges from 0-25% throughout the site. The site has good productivity for woodland management, with a site index of 65 for upland oaks.

Management and Silvicultural Recommendations

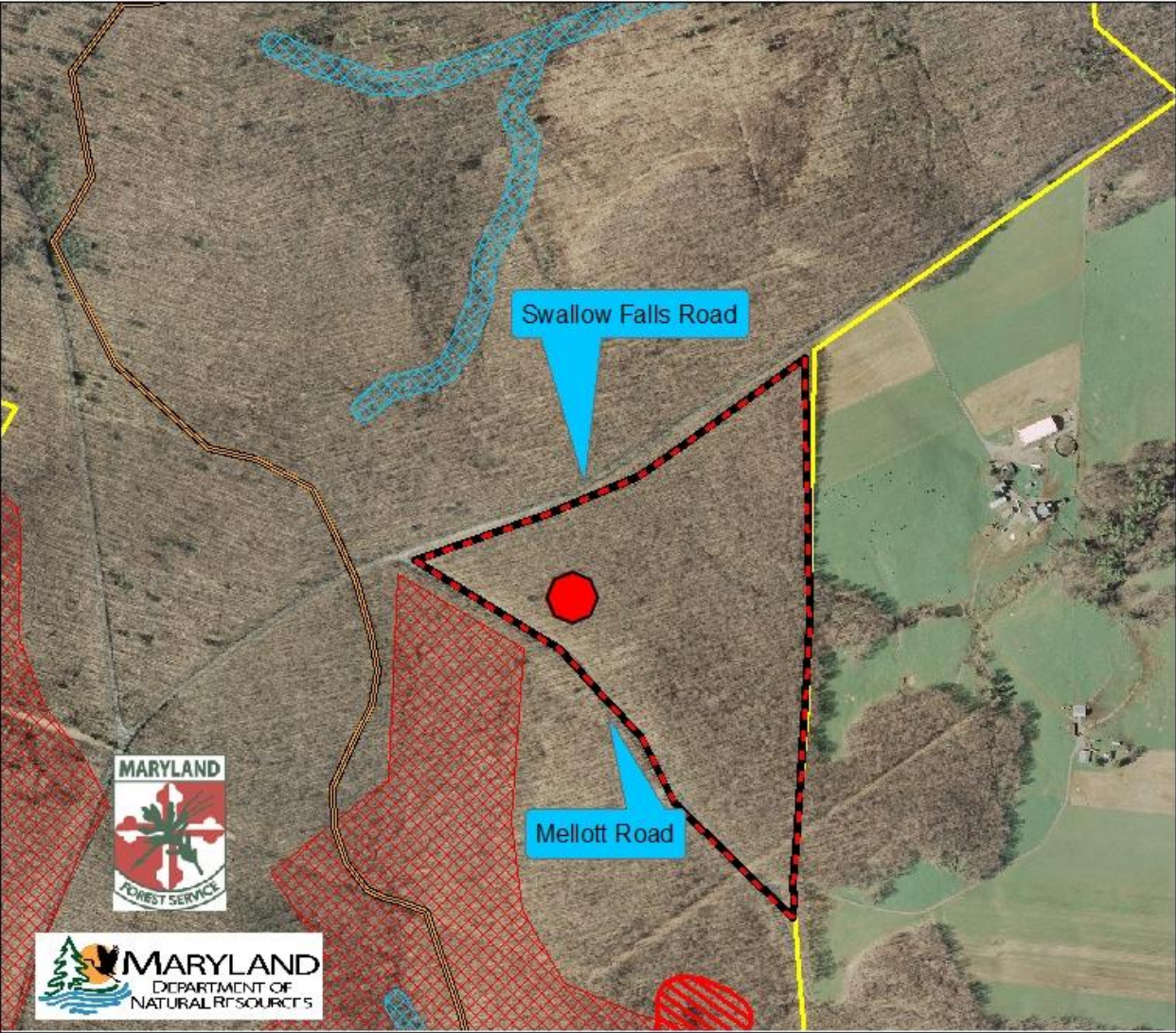
The planned silvicultural treatment for this site is to move toward regenerating this mature stand using a 3-stage shelter-wood system. The first stage of this system will be a "conditioning cut"- the stand will be thinned to reduce the stocking, improve the health, vigor and condition of the residual seed producing trees and thereby increasing the potential for seed production and seedling establishment. The objective of this thinning is to reduce the stocking level to approximately 60% relative density by applying a free thinning throughout the stand. This practice will remove most of the "unacceptable" merchantable growing stock, while retaining approximately, 90 sq. ft. of basal area per acre. This practice will provide a harvest of approximately 1,800-2,200 Bd. Ft. per acre. In order to retain important wildlife habitat elements, and to preserve a 'legacy' component of the original stand, 5% of the stand will be set aside in retention areas that will be identified during this thinning operation to be carried through to future final harvest. Retention will be concentrated in stream buffers, as well as islands of 8-12 trees concentrating on protecting existing or potential cavity trees and mast producers. As white oak does not tolerate exposure associated with a final harvest, any white oak retention will be located in island groupings, or buffer areas.

While the objectives of this thinning are focused on improving the health and vigor of the residual stand to increase seed production, as an added bonus, the increased sunlight on the forest floor will stimulate growth of the limited existing seedlings, keeping them alive in the stand to contribute toward later regeneration efforts. Unfortunately, this will also stimulate the already problematic, interfering plant competition. The stand will be monitored for an acorn/seed crop, at which time additional cultural work will be prescribed as necessary to provide conditions for seedling development in the 2nd stage (establishment/ seed cut) of this regeneration sequence.

Deer impacts will also be addressed in the contract. The harvest will be managed to retain high tops and lops from cut trees to offer some deer browse protection to developing seedlings. In addition, the storm damaged Red Maples that now exist as tall woody interference will be cut during this thinning to encourage desirable sprout development. It is expected that deer will browse these rapidly developing sprouts and possibly take some of the pressure off the less palatable oak seedling stocks. Those that get by the deer will add additional desirable seedlings toward future regeneration efforts.

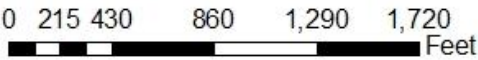
All wetlands and streams will be buffered according to the guidelines within the PGSF Sustainable Forest Management Plan.

Compartment 34 Stand 9 FY-20



| | |
|------------------------|-----------------|
| Stand Acres..... | 43 |
| Harvestable Acres..... | 36 |
| Forest Type..... | Mixed Oak |
| Basal Area..... | 122 |
| BA AGS..... | 104 |
| Stocking..... | 90% |
| Site Index..... | 60 for Red Oak |
| Composition..... | White Oak 40% |
| | Red Maple 39% |
| | Black Cherry 6% |

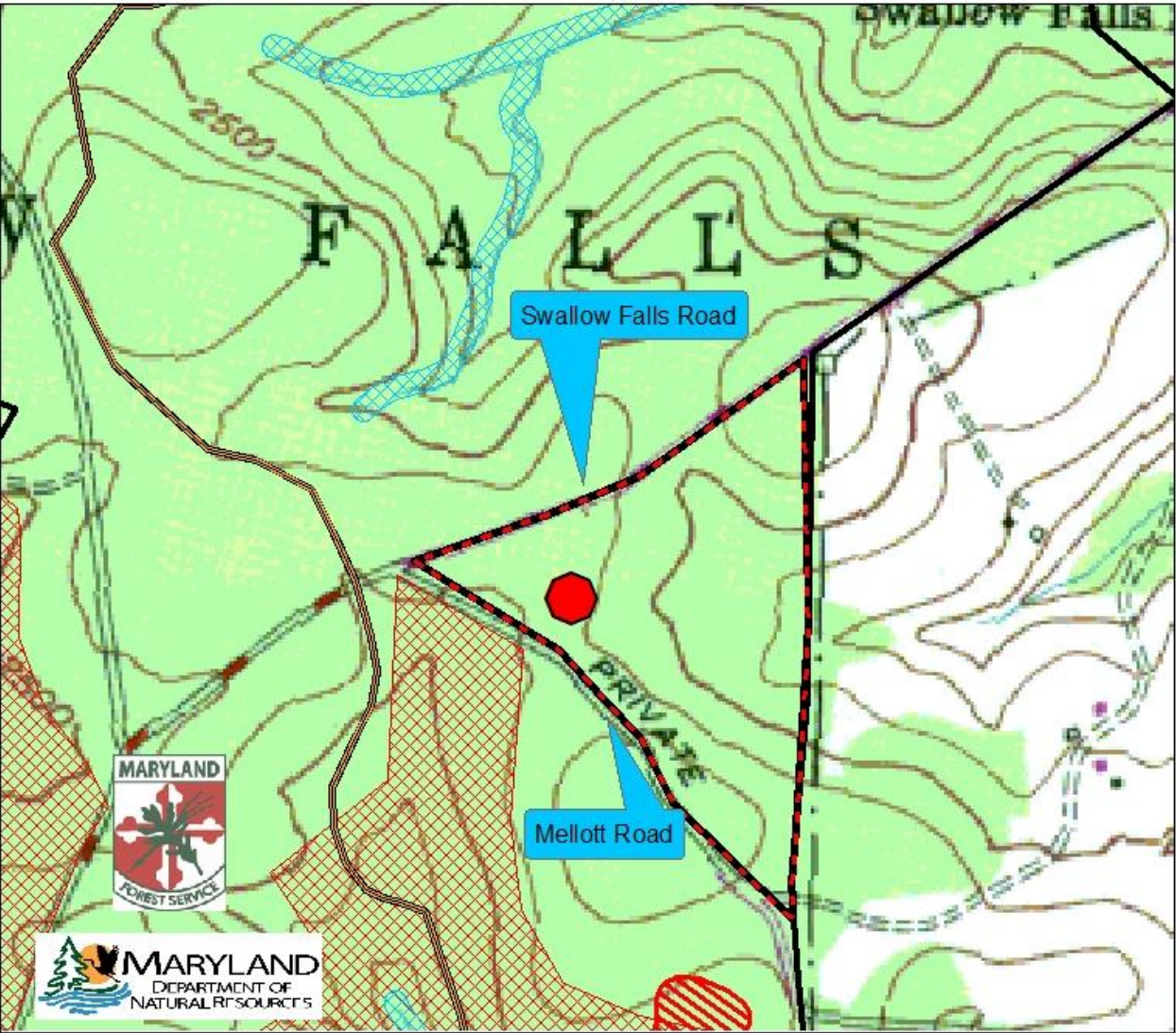
| HCVF Components | |
|-----------------|---|
| | Wildlands |
| | Ecologically Significant Area |
| | Old Growth w/ 300' Buffer |
| | Old Growth Management Unit |
| | Wetland of State Concern w/ 100' Buffer |
| | Streams w/ 50' Buffer |



79°25'59.335"W 39°29'8.594"N

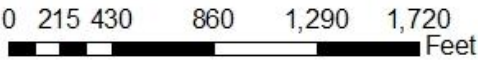


Compartment 34 Stand 9 FY-20

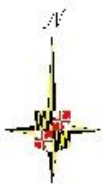


| | |
|------------------------|-----------------|
| Stand Acres..... | 43 |
| Harvestable Acres..... | 36 |
| Forest Type..... | Mixed Oak |
| Basal Area..... | 122 |
| BA AGS..... | 104 |
| Stocking..... | 90% |
| Site Index..... | 60 for Red Oak |
| Composition..... | White Oak 40% |
| | Red Maple 39% |
| | Black Cherry 6% |

| HCVF Components | |
|-----------------|---|
| | Wildlands |
| | Ecologically Significant Area |
| | Old Growth w/ 300' Buffer |
| | Old Growth Management Unit |
| | Wetland of State Concern w/ 100' Buffer |
| | Streams w/ 50' Buffer |



79°25'59.335"W 39°29'8.594"N



Description/Resource Impact Assessment

Location: This area is located on the Snaggy Mountain Complex in Compartment 41, Stands 5&7 of the Garrett State Forest. It sits on the south side of Maple Glade Road directly across from the Handicapped Hunter Access Area.

Forest Community Type and Condition: This 39-acre site contains mature, 100 year old mixed oak stands. The over story is made up primarily of White Oak (68%), Scarlet Oak (15%) and Red Maple (11%). The stands had been thinned in 2008 and 2011 respectively. They are just fully stocked at 65% relative density and contain 71 sq.ft. BA/acre. The prior thinning operations happened to coincide with a significant bumper crop of acorns in this area and functioned as first-stage shelter wood entries, providing nearly ideal conditions for desirable seedling establishment. These stands contain sufficient desirable regeneration on 68% of the site, and 52% of the stand is stocked with oak seedlings. This residual, mature stand is in somewhat poor condition, with only 27% of the stand being considered acceptable growing stock as much of the oak is showing signs of crown die-back and general decline.

Interfering Elements: Deer browse pressure in this area is estimated to be moderate and must be addressed when considering regeneration efforts on this site. Interfering plant competition is slight to moderate, with only 10% of the stand having tall woody interference, much of this being storm damaged red maple that will actually contribute to final desirable stand stocking by sprouting a new straight stem after being cut during harvest. 12% of the stand contains low woody interference in the form of the typically problematic Dewberry that should not be a problem as the regeneration present is already above the height of the Dewberry. Non-native invasive species (NNIS) observed in and around the stand include one observance of multi-flora rose, and Japanese stilt-grass is present along the road edge and in surrounding openings.

Historic Conditions: These stands had been thinned in 2008 and 2011 respectively, with the thinning coinciding with a significant bumper crop of acorns in 2011. The stands had been sprayed for Gypsy Moth suppression in 1989,90 and 91. There were no forest pests identified during the inventory. However, the unseasonably wet weather this summer has resulted in outbreaks of foliar fungal diseases affecting many hardwood stands throughout the forest, including this stand.

Rare, Threatened and Endangered Species: The Forest Manager knows of no rare, threatened or endangered species on the site or impacted by the silvicultural prescription.

Habitats and Species of Management Concern: There are no known habitats or species of management concern on this site.

Water Resources: This stand has a southern aspect and is drained by an unnamed tributary of Toliver Run within the Youghiogheny River Watershed. All wetlands and watercourses will be buffered according to the standards spelled out within the PGSF Sustainable Forest Management Plan.

Recreation Resources: The stand sits 100 yards or greater upslope of a section of the “5 ½ Mile Hiking Trail” that joins Herrington Manor and Swallow Falls State Parks through the Garrett State Forest. Any management work in this stand should have no impact to the recreational use of the trail.

Soil Resources: The underlying soils are mapped as “DeKalb and Gilpin very stony loams”: These soils are generally moderately deep and well drained with inclusions of some poorly drained soils. Degree of slope ranges from 0-25% throughout the site. Equipment limits range slight to moderate as slopes approach 25%. Hazard of erosion is slight to moderate on the steeper slopes. The site has good productivity for woodland management, with a site index of 60-70 for upland oaks

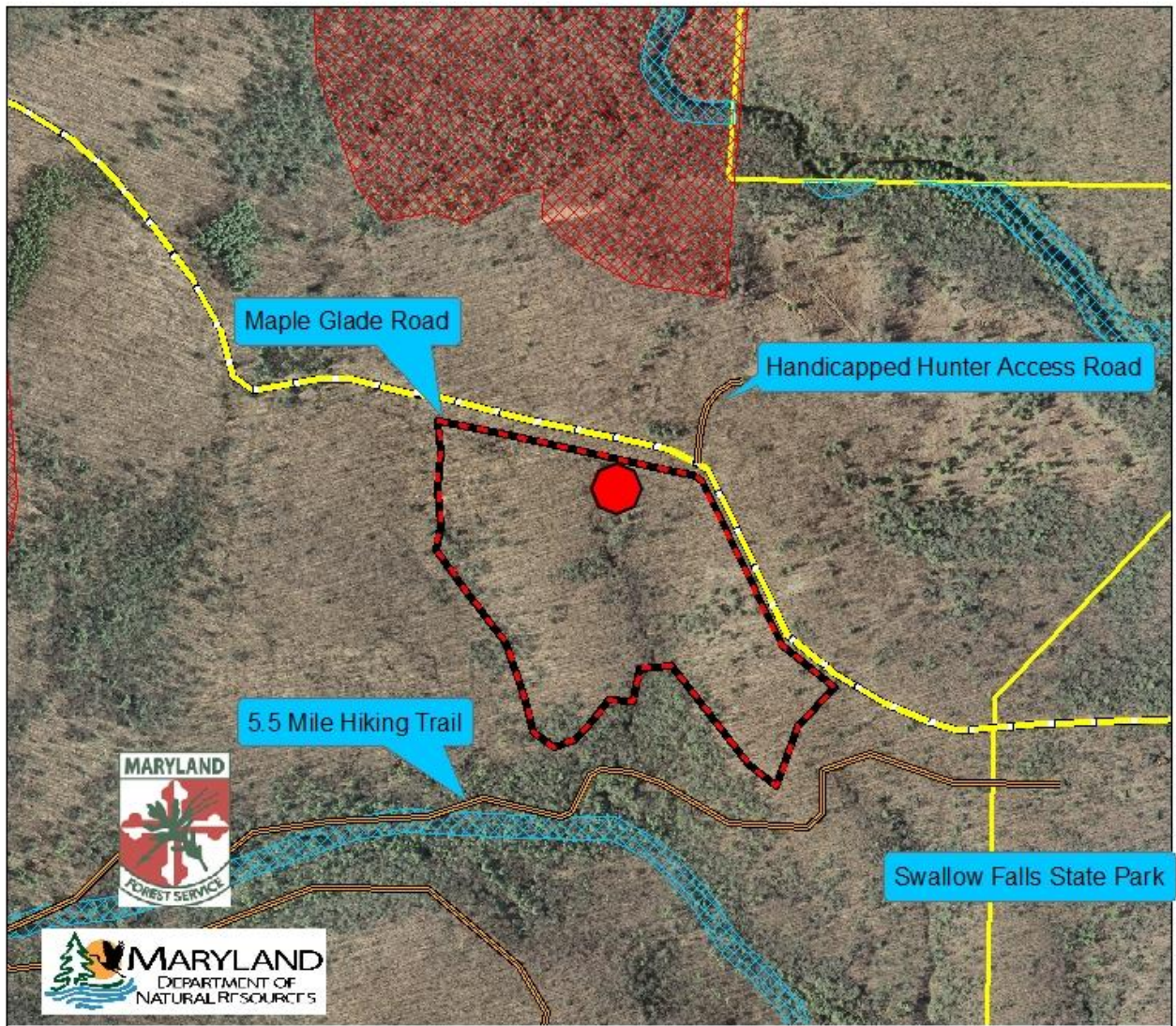
Management and Silvicultural Recommendations

Management goals for this stand are to regenerate this stand, taking advantage of the well established desirable regeneration, especially the 52% oak seedling stocks present at this time. This work will be accomplished using a clearcut with variable retention. This harvest will involve the cutting of the majority of the over story trees. A variable retention approach will be used whereby 4-6 healthy, dominant or co-dominant trees shall be retained for each acre of this harvested area. Particular emphasis shall be placed on retaining groups of healthy oaks, and live or dead den/cavity trees. All other hardwood trees greater than 2 inches DBH shall be cut; and all conifers (Hemlock or White Pine) will be retained for diversity. This harvest will yield approximately 2,700 -3,000 board feet per acre.

The slight to moderate interfering plant competition should be of little consequence in regenerating the site. The 10% of the stand having tall woody interference, (much of this being storm damaged red maple) will actually contribute to final desirable stand stocking by sprouting a new straight stem after being cut during harvest. The 12% of the stand containing low woody interference in the form of the problematic Dewberry, is of little concern, as the existing regeneration is already above the height of the Dewberry.

As deer impacts are expected to be moderate, even in this already established regeneration, logging contractor will be required to leave high tops and lops to deter excessive deer browsing of desired, established regeneration. All ‘top-wood’ /pulpwood from saw timber trees shall be left as ‘high tops’. As desirable seedlings reach a competitive position in the stand, the remaining coarse woody debris will continue to serve as a host to beneficial insects, fungi, and animals as it continues its nutrient cycling role in the forest.

Compartment 41 Stands 5 & 7 FY-20



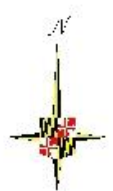
| | |
|------------------------|------------------|
| Stand Acres..... | 39 |
| Harvestable Acres..... | 34 |
| Forest Type..... | Mixed Oak |
| Basal Area..... | 71 |
| BA AGS..... | 19 |
| Stocking..... | 64% |
| Site Index..... | 60 for White Oak |
| Composition..... | White Oak 68% |
| | Scarlet Oak 15% |
| | Red Maple 11% |

HCVF Components

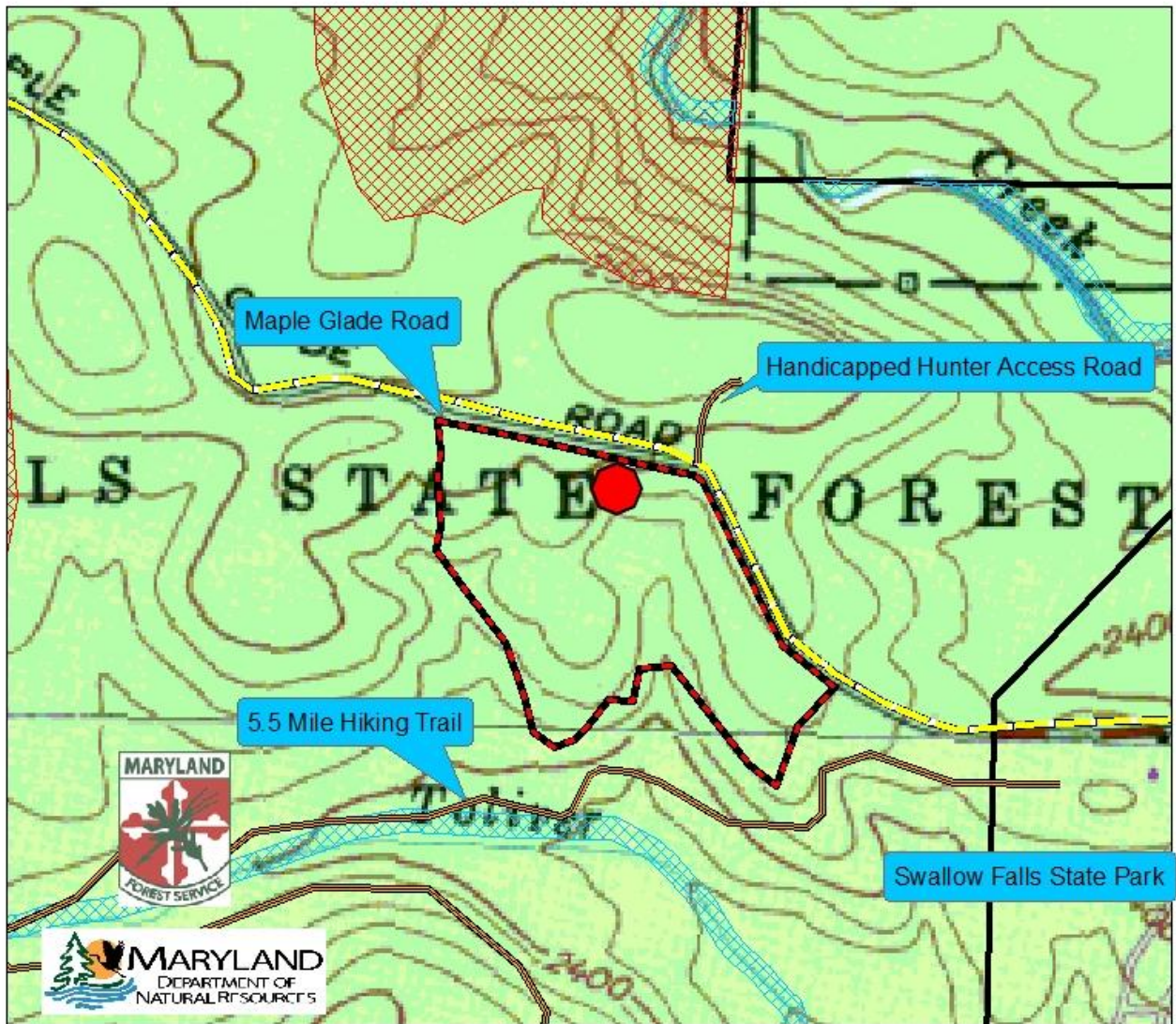
| | |
|--|---|
| | Wildlands |
| | Ecologically Significant Area |
| | Old Growth w/ 300' Buffer |
| | Old Growth Management Unit |
| | Wetland of State Concern w/ 100' Buffer |
| | Streams w/ 50' Buffer |

0 215 430 860 1,290 1,720 Feet

79°25'53.879"W 39°30'10.453"N



Compartment 41 Stands 5 & 7 FY-20




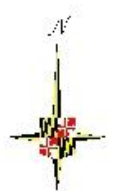
| | |
|------------------------|------------------|
| Stand Acres..... | 39 |
| Harvestable Acres..... | 34 |
| Forest Type..... | Mixed Oak |
| Basal Area..... | 71 |
| BA AGS..... | 19 |
| Stocking..... | 64% |
| Site Index..... | 60 for White Oak |
| Composition..... | White Oak 68% |
| | Scarlet Oak 15% |
| | Red Maple 11% |

HCVF Components

-  Wildlands
-  Ecologically Significant Area
-  Old Growth w/ 300' Buffer
-  Old Growth Management Unit
-  Wetland of State Concern w/ 100' Buffer
-  Streams w/ 50' Buffer

0 215 430 860 1,290 1,720 Feet

 79°25'53.879"W 39°30'10.453"N



Description/Resource Impact Assessment

Location: This area is located on the Snaggy Mountain Complex in Compartment 42, Stands 12&13 of the Garrett State Forest. It sits on the north side of Maple Glade Road and shares a boundary with Swallow Falls State Park.

Forest Community Type and Condition: This 15-acre site contains an over mature, 118 year old mixed hardwood stands. The over story is made up primarily of White Oak (45%), and Red Maple (38%) and Black Cherry (6%). Stand 12, (the western ½ of the site) had been thinned in 1995, the area is fully stocked at 93% relative density, contains 117 sq.ft. BA/acre of which 87 sq.ft. BA is considered acceptable growing stock.

The 1995 thinning prompted the establishment of a new seedling cohort that has developed to sapling size. Much of these saplings, particularly the Cherry and Maple have been damaged by the 2002 snow storm, and their regeneration value now lies in their sprout potential. Given the expected high deer impacts, only 16% of the site is currently adequately stocked with desirable regeneration. However, in the absence of deer pressure, 74% of the stand contains sufficient regeneration to fully regenerate this stand including 21% of the site supporting sufficient oak seedlings if protected from deer browse.

Interfering Elements: Deer browse pressure in this area is estimated to be moderate to high and must be addressed when considering regeneration efforts on this site. Interfering plant competition is slight to moderate, with only 21% of the stand having tall woody interference, much of this being storm damaged Red Maple and Cherry that will actually contribute to final desirable stand stocking by sprouting a new straight stem after being cut during harvest. Another 42% of the stand contains either fern, grass or low woody interference that will restrict new seedling development, but should not be an issue, as the relied upon seedlings, saplings, and sprout based regeneration is already above the height of these impediments. Non-native invasive species (NNIS) observed in and around the stand include one observance of multi-flora rose, and Japanese stilt-grass is present along the road edge and in surrounding openings.

Historic Conditions: Stand 12 (to the west) had been thinned in 1995. The stands had been sprayed for Gypsy Moth suppression in 1989, 90 and 91. There were no forest pests identified during the inventory. However, the unseasonably wet weather this summer has resulted in outbreaks of foliar / fungal diseases affecting many hardwood stands throughout the forest, including this stand.

Rare, Threatened and Endangered Species: The Forest Manager knows of no rare, threatened or endangered species on the site or impacted by the silvicultural prescription.

Habitats and Species of Management Concern: There are no known habitats or species of management concern on this site.

Water Resources: This stand has a northern aspect and drains to Muddy Creek within the Youghiogheny River Watershed. All wetlands and watercourses will be buffered according to the standards spelled out within the PGSF Sustainable Forest Management Plan.

Recreation Resources: The stand shares a boundary with an undeveloped section of Swallow Falls State Park. Any management work in this stand should have no impact to recreational use in the park.

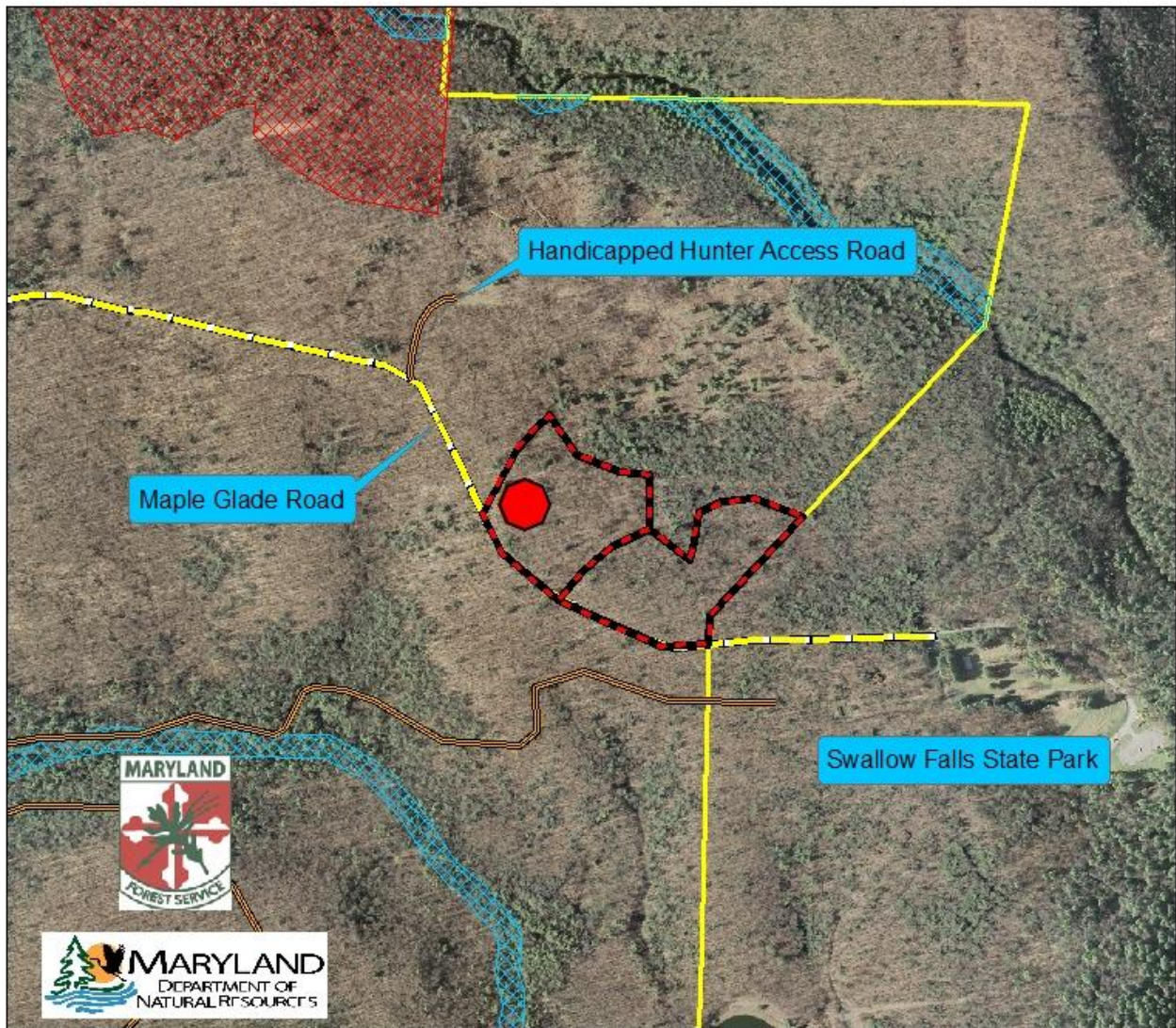
Soil Resources: The underlying soils are mapped as “DeKalb and Gilpin very stony loams”: These soils are generally moderately deep and well drained with inclusions of some poorly drained soils. Degree of slope ranges from 0-25% throughout the site. Equipment limits range slight to moderate as slopes approach 25%. Hazard of erosion is slight to moderate on the steeper slopes. The site has good productivity for woodland management, with a site index of 60-70 for upland oaks

Management and Silvicultural Recommendations

Management goals for this stand are to regenerate this stand, taking advantage of the established desirable regeneration, especially the 21% oak seedling stocks present at this time. This work will be accomplished using a clearcut with variable retention. This harvest will involve the cutting of the majority of the overstory trees. A variable retention approach will be used whereby 4-6 healthy, dominant or co-dominant trees shall be retained for each acre of this harvested area. Particular emphasis shall be placed on retaining groups of healthy oaks, and live or dead den/cavity trees. All other hardwood trees greater than 2 inches DBH shall be cut; and all conifers (Hemlock or White Pine) will be retained for diversity. This harvest will yield approximately 5,500 -6,500 board feet per acre.

The moderate interfering plant competition should not present a problem in regenerating the site. The 21% of the stand having tall woody interference, much of this being storm damaged Red Maple and Cherry that will actually contribute to final desirable stand stocking by sprouting a new straight stem after being cut during harvest. Another 42% of the stand contains fern, grass or low woody interference that will restrict new seedling development, but should not be an issue, as the relied upon existing seedlings, saplings, and sprout based regeneration is already above the height of these impediments. The moderate to high, deer impacts will be addressed by protecting developing seedlings, and stump sprouts from deer browse by erecting an 8 ft. tall deer enclosure fence, with the fence to be in place prior to the beginning of the first growing season after harvest and to be removed once the site is fully stocked within 5-8 yrs.

Compartment 42 Stands 12 & 13 FY-20



| | |
|------------------------|------------------|
| Stand Acres..... | 15 |
| Harvestable Acres..... | 10 |
| Forest Type..... | Mixed Oak |
| Basal Area..... | 117 |
| BA AGS..... | 87 |
| Stocking..... | 93% |
| Site Index..... | 60 for White Oak |
| Composition..... | White Oak 53% |
| | Red Maple 44% |
| | Black Cherry 7% |

HCVF Components

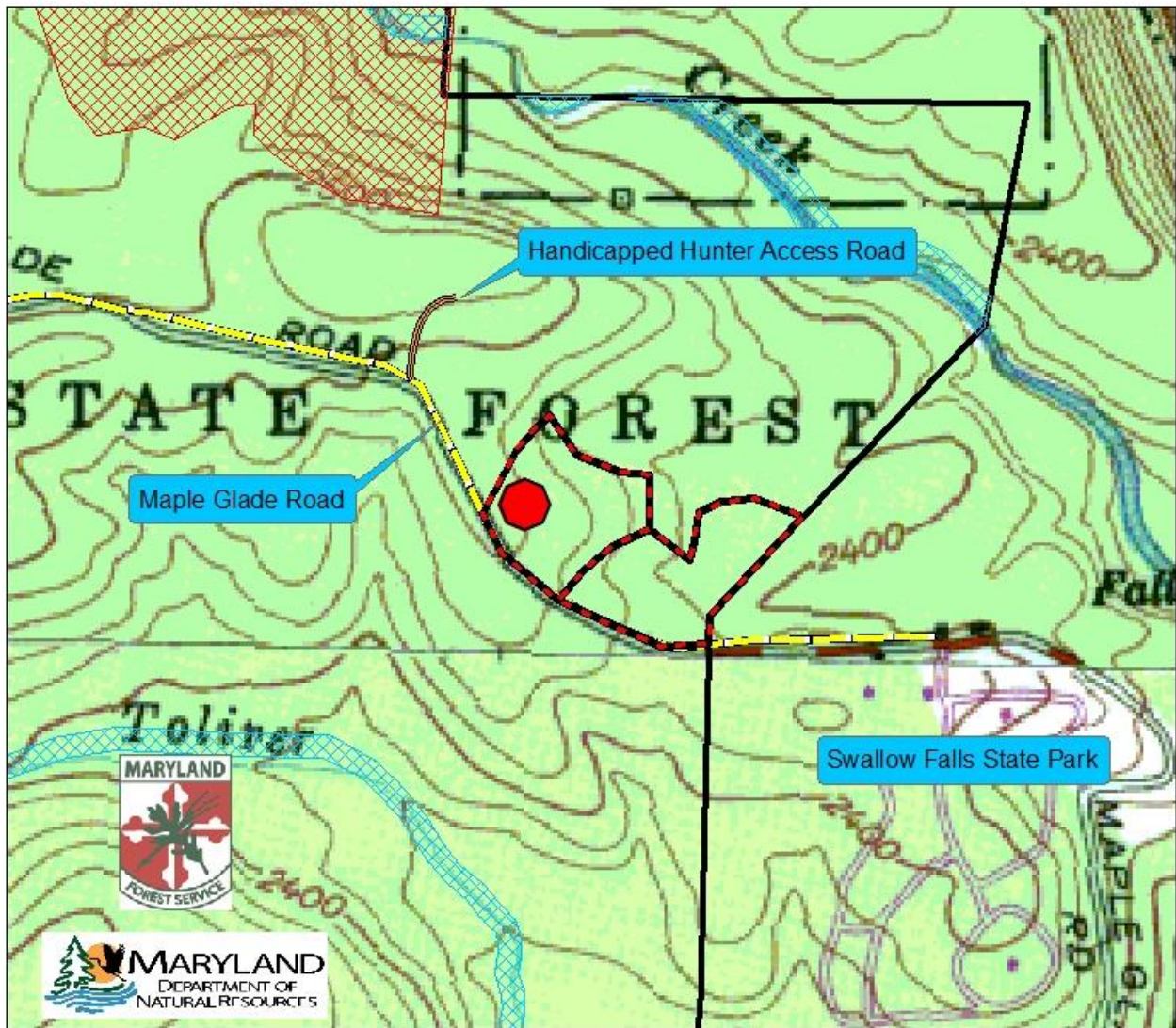
| | |
|--|---|
| | Wildlands |
| | Ecologically Significant Area |
| | Old Growth w/ 300' Buffer |
| | Old Growth Management Unit |
| | Wetland of State Concern w/ 100' Buffer |
| | Streams w/ 50' Buffer |

0 215 430 860 1,290 1,720 Feet

79°25'42.557"W 39°30'6.454"N



Compartment 42 Stands 12 &13 FY-20



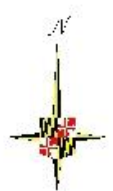
| | |
|------------------------|------------------|
| Stand Acres..... | 15 |
| Harvestable Acres..... | 10 |
| Forest Type..... | Mixed Oak |
| Basal Area..... | 117 |
| BA AGS..... | 87 |
| Stocking..... | 93% |
| Site Index..... | 60 for White Oak |
| Composition..... | White Oak 53% |
| | Red Maple 44% |
| | Black Cherry 7% |

HCVF Components

-  Wildlands
-  Ecologically Significant Area
-  Old Growth w/ 300' Buffer
-  Old Growth Management Unit
-  Wetland of State Concern w/ 100' Buffer
-  Streams w/ 50' Buffer

0 215 430 860 1,290 1,720 Feet

 79°25'42.557"W 39°30'6.454"N



X. Operational Management and Budget Summary (Final FY-19 AWP)

A. INTRODUCTION

This section of the plan is designed to cover the annual cost and revenues associated with the operational management of Potomac-Garrett State Forest (PGSF). The numbers expressed in this section are averages based on actual annual expenses and revenues over 10 years ending July 1, 2018. These numbers should reflect expected results for upcoming Fiscal Years Work Plan. However, annual changes in management prescriptions, timber markets, weather conditions, and public use of the forest can significantly affect revenues.

(Figures reported are a reflection of 2019 Budget amounts compared to the previous 10-year average. See 10-Year Budget Summary.)

B. PGSF FUNDING SOURCES

1. General Fund State Forests in Maryland are funded from several sources. The first is the **General Fund**. This is money generated from taxes. It is used in State Forests primarily to fund classified (permanent) employee salaries and benefits.

2. Special Fund The second source is the **Special Fund**. This is money generated from revenue. The State Forests generate revenue through the collection of service fees, as well as the sale of timber and forest products as detailed within the annual work plan and deposited in the Department of Natural Resources Forest or Park Reserve Fund. These funds must be appropriated by the General Assembly through the annual budgeting process before being spent. It is used in State Forests to fund operational costs. The State Forest budget is prepared approximately one year before the beginning of the fiscal year in which it will be spent. The budget then goes through the legislative approval/review process along with all other State operating budgets. Once adopted, the budget goes into effect the first day of the fiscal year (July 1st).

3. ORV Fund In addition, PGSF is included in the Maryland Forest Service's Off Road Vehicle (ORV) Budget. This separate budget is based on **revenue generated from ORV permit sales** statewide and is allocated back to the State Forests through the budgeting process. ORV funds are a restricted special fund and can only be spent for ORV Trail related expenditures. The fund source (permit sales) has dwindled with the necessary closure of significant trails on the Savage River and Green Ridge State Forests. The limited funds available have been directed toward replacement trail developments on the Savage River and Green Ridge State Forests.

4. Other Funding With limited budgets available for operations, State Forest staffs have been seeking alternative funding sources to carry out necessary maintenance and operations of the State Forest. Sources of potential funding include:

a. Forest Certification Funds

Grant monies secured for the completion of the particular requirements associated with maintaining "Forest Certifications".

b. National Recreational Trail Grants

These grants are competitive and were generally limited to \$30,000 per year per grant, though program changes now allow \$90,000. The source of this funding is the Federal Department of Transportation administered through the Maryland Department of Transportation, State Highway Administration. These funds are designated reimbursable funds and are applied to various trail related projects as detailed in specific grant requests.

c. Other Grants

In January of 2012, the Governor announced approximately \$23 million in the proposed capital budget for public land projects that will support nearly 300 jobs, help restore the environment, reduce energy usage, and improve services to visitors and citizens. Approximately \$800,000 of this had been directed to improving the public access and trail network on Potomac-Garrett State Forests.

d. NGO Conservation Partnerships

State Forest staff has regularly sought wildlife habitat improvement grants from various non-governmental conservation organizations. Local chapters have been generous with support and sponsorship of grants submitted to their national, state and local offices. National Wild Turkey Federation and The Ruffed Grouse Society are regular contributors of local habitat funding.

C. BUDGET DISTRIBUTION

1. *Operational Budget for 2019 = \$543,076; 10-Year Average = \$507,840*

Operational budget expenses are those typical year to year costs paid directly out of the PGSF Operational Budget by the State Forest Manager and vary based on approval of operational budgets. The Forest Manager prepares a proposed operational budget for the forest based on instructions provided approximately one year in advance of the fiscal year. Year to year, the operational budget is expected to cover:

a. Classified Salaries, Wages and Benefits

This cost is associated with General Funds which are State tax revenues provided annually. These funds are used to pay the salaries, wages and benefits of Maryland Classified Employees responsible for the management, operations and maintenance of the State Forest.

2019 = \$340,625; 10-Year Average = \$303,301

b. Contractual Staffing

This cost is associated with contractual personnel ("seasonals") hired to assist the classified staff in conducting work outlined in the annual work plan, managing the daily activities on the forest, including boundary line work, maintenance of trails, forest roads, maintaining primitive campsites, a public shooting range, overlooks, wildlife habitat areas, and implementing all maintenance, recreational, silviculture, and ecosystem restoration projects. Does not include those contractual employees hired for special projects over and above the routine management and operation of the forest such as special hires to meet a particular Forest Certification requirement, or a special trail project.

2019 = \$63,203; 10-Year Average = \$69,195

c. Land Management and Operation Cost

This includes expenses for office and field equipment, vehicles, gravel, signs, boundary paint, roadwork contracts and construction, trash removal from illegal dumping, boundary line work & surveying, tree planting, site preparation, control of invasive species, non-commercial thinning and other forest management practices. These costs vary greatly from year to year based on the activities identified in the Annual Work Plan.

2019 = \$90,248; 10-Year Average = \$85,028

d. County Payments

These are revenue payments to local county governments which will vary every year. Payments are made on an annual basis to Garrett County based on 25% of the gross revenue generated from PGSF. These payments come out of revenue generated from timber sales and recreation. These payments have traditionally been used to help the counties offset the loss in property tax revenues which are not paid on State owned lands. In 2019, this payment was replaced with a "property tax" type payment paid by the state to the county per the acreage of state lands in a given county, as payment in lieu of private property tax gained from the land.

2019 = \$49,000; 10-Year Average = \$43,489

(This figure no longer comes as a budgetary cost to the State Forest, but rather as a cost to DNR as a whole).

2. Special Project Funds Beyond the typical year to year costs paid directly out of the PGSF Operational Budget, the State Forest generally has a number of additional special projects being carried out to meet various resource management objectives. These special projects are taken on to meet unit objectives as funding sources are identified or secured beyond the normal State Budget stream. These funds are often narrowly targeted to cover specific deliverables over and above the routine

management and operation of these public lands. Special Project Funds are loosely categorized as follows:

a. Outside Grants

Funding secured to address specific resource management projects otherwise not funded. Sources include National Recreation Trails Grants, NGO Conservation Organizations (NWTF, RGS, etc.)

2019 = \$65,128; 10-Year Average = \$40,275

b. Certification Fund

Grant monies secured for the completion of the particular requirements associated with maintaining "Forest Certifications"; including forest inventory, resource monitoring, critical cultural work, etc.

2019 = \$0.00; 10-Year Average = \$14,057

c. ORV Funds

ORV funds are a restricted special fund and can only be spent for ORV Trail related expenditures and have played a critical role in maintaining the ORV Trail networks for the State Forests. The fund source (permit sales) has dwindled with the necessary closure of significant trails on the Savage River and Green Ridge State Forests. The limited funds available have been directed toward replacement trail developments on the Savage River and Green Ridge State Forests. Managers have had to rely on other grant sources to address sorely underfunded ORV Trail maintenance demands.

2019 = \$0.00; 10-Year Average = \$8,533

D. SUMMARY

This is the general breakdown on Revenues and Operational Costs associated with the Potomac-Garrett State Forest. As described, these figures will vary from year to year. A more detailed picture on revenues and operational costs will be reviewed quarterly as the actual picture develops within implementation of Annual Work Plan and as operating budgets are approved.

The following table offers a 10-year summary showing the Operational Budget trends for Potomac-Garrett State Forest.

Appendix 1

10 –Year Budget Summary For Potomac-Garrett State Forest

| <i>Classified</i> | <i>Contractual</i> | <i>Land Mngt & Operations</i> | <i>County</i> | <u>Special Project Funding</u> | | | <i>Total Available funds</i> |
|-------------------|--------------------|---|----------------|--------------------------------|----------------------|--------------|--------------------------------------|
| | | | | <i>"Outside"</i> | <i>Certification</i> | <i>ORV</i> | |
| <i>Staff</i> | <i>Staff</i> | | <i>Payment</i> | <i>Grant</i> | <i>Funds</i> | <i>Funds</i> | |
| \$255,157.00 | \$94,090.00 | \$86,023.00 | \$51,000.00 | \$0.00 | \$0.00 | \$31,830.00 | \$518,100.00 |
| \$209,124.00 | \$59,266.00 | \$63,693.00 | \$44,000.00 | \$30,000.00 | \$25,537.00 | \$17,000.00 | \$448,620.00 |
| \$274,899.00 | \$82,088.00 | \$65,303.00 | \$44,640.00 | \$60,000.00 | \$16,929.00 | \$17,000.00 | \$560,859.00 |
| \$279,875.00 | \$82,088.00 | \$91,524.00 | \$19,660.00 | \$68,750.00 | \$25,167.00 | \$12,000.00 | \$579,064.00 |
| \$279,875.00 | \$79,225.00 | \$114,240.00 | \$25,000.00 | \$0.00 | \$20,000.00 | \$0.00 | \$518,340.00 |
| \$317,847.00 | \$83,728.00 | \$103,912.00 | \$37,250.00 | \$0.00 | \$20,000.00 | \$0.00 | \$562,737.00 |
| \$353,662.00 | \$52,467.00 | \$88,920.00 | \$23,450.00 | \$39,150.00 | \$20,000.00 | \$0.00 | \$577,649.00 |
| \$362,577.00 | \$53,551.00 | \$106,803.00 | \$49,297.00 | \$90,000.00 | \$13,500.00 | \$0.00 | \$675,728.00 |
| \$380,049.00 | \$52,467.00 | \$68,604.00 | \$49,000.00 | \$90,000.00 | \$13,500.00 | \$0.00 | \$653,620.00 |
| \$340,625.00 | \$63,203.00 | \$90,248.00 | \$49,000.00 | \$65,128.00 | \$0.00 | \$0.00 | \$608,204.00 |
| | | | | | | | |
| \$305,369.00 | \$70,217.30 | \$87,927.00 | \$39,229.70 | \$44,302.80 | \$15,463.30 | \$7,783.00 | \$570,292.10 |

Appendix 2

10 Year Timber Harvest Summary for Potomac-Garrett State Forest

| <i>Fiscal Year</i> | <i>Planned harvest</i> | <i>Bd. Ft Vol. Harvested</i> | <i>Gross Value of sale</i> |
|--------------------|------------------------|------------------------------|----------------------------|
| 2009 | 500 MBF * | 251,990 | \$ 29,578 |
| 2010 | 500 MBF * | 168,131 | \$ 31,720 |
| 2011 | 500-600 MBF | 465,653 | \$ 155,900 |
| 2012 | 500-600 MBF | 534,679 | \$ 207,454 |
| 2013 | 500-600 MBF | 331,052 | \$ 139,300 |
| 2014 | 300 MBF | 298,221 | \$ 90,031 |
| 2015 | 552 MBF | 492,401 | \$ 201,311 |
| 2016 | 634 MBF | 542,534 | \$ 141,416 |
| 2017 | 533 MBF | 520,937 | \$ 99,540 |
| 2018 | 544 MBF | 456,517 | \$156,602 |
| | | | |

*(Salvage driven sales, saw log volumes lost to pulpwood)

APPENDIX 3

GLOSSARY

- AGS** – Acceptable Growing Stock; a reflection of a trees present and future merchantability
- AWP** – Annual Work Plan
- BA** – Basal Area; cross sectional area of a tree 4.5 feet above ground used in determining stocking level
- BD.FT.** – Board foot is a standard measure of lumber equal to a board measuring 12"x12"x1"
- CARS** – Corrective Action Reports; audit report reflecting program shortcoming
- Chain** – A surveyors unit of measure = 66 feet
- DBH** – Diameter Breast Height; standard forestry measurement of tree diameter taken 4½ feet above the ground
- EDRR** – Early Detection and Rapid Response; tactic used to lessen impacts of non-native invasive plants.
- ESA** – Ecologically Sensitive Area; area of the forest to be managed for conservation of sensitive species and/or habitats supporting them
- FSC/SFI** – Forest Stewardship Council/Sustainable Forest Initiatives; internationally recognized third-party forest certification programs that certify sustainably managed forests
- HCVF** – High Conservation Value Forests
- HWA** – Hemlock Wooly Adelgid; invasive exotic forest pest of Hemlock trees
- NGO** – Non-Governmental Organization
- NNIS** – Non-Native Invasive Species
- NRT** – National Recreational Trails; Federally funded grant program providing funds for trail maintenance and development
- ORV** – Off Road Vehicles; all types of unregistered vehicles designed to be ridden off-road
- PGSF** – Potomac-Garrett State Forest
- RGS** – Ruffed Grouse Society
- RPI** – Rings Per Inch; standard forestry measurement related to growth
- RT&E** – Rare, Threatened and Endangered; classification of species in need of special conservation efforts
- SILVA** – Forest Inventory System
- SITE INDEX** – A measure of site quality, reflecting the growth potential for forest trees on a particular location

TSI – Timber Stand Improvement

UGS – Unacceptable Growing Stock; a reflection of a trees present and future merchantability

USFS – United States Forest Service